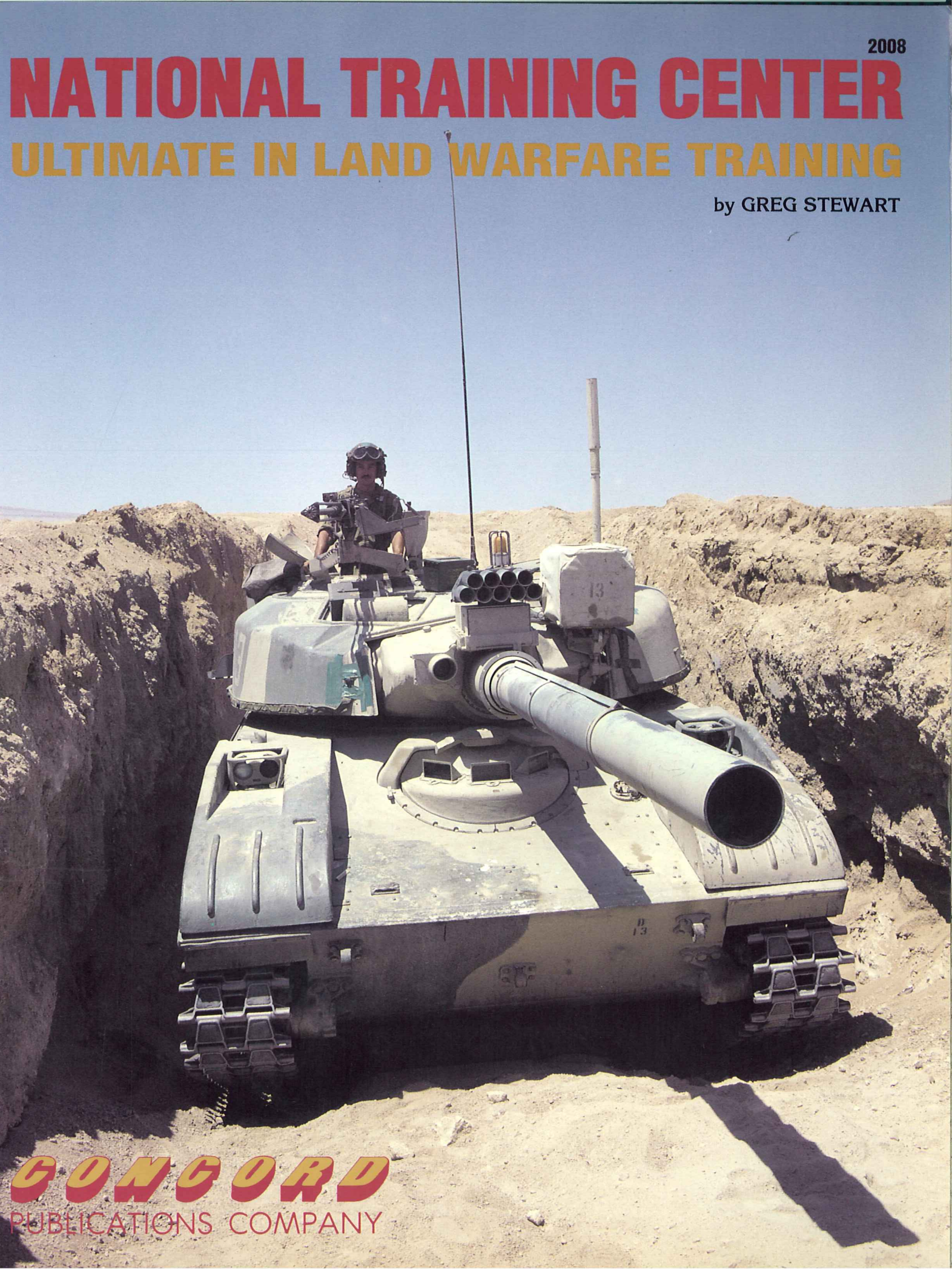
2008

NATIONAL TRAINING CENTER

ULTIMATE IN LAND WARFARE TRAINING

by GREG STEWART



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NATIONAL TRAINING CENTER

ULTIMATE IN LAND WARFARE TRAINING

TEXT AND PHOTOS BY GREG STEWART

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Introduction

In 1981, the U.S. Army opened the National Training Center (NTC) at Fort Irwin, located in the Mojave Desert of Southern California.

Due to the increased range, speed and lethality of modern weapons systems, training areas once considered adequate for entire Army divisions are now barely sufficient to accommodate brigade or even battalion-sized units.

At the NTC, in an area of almost 1,000 square miles of open desert terrain, the U.S. Army has constructed the world's most sophisticated and realistic battlefield. The NTC has facilities to conduct both day and night, large scale combined arms training for brigades and regiments. It conducts 14 training cycles annually for brigade-sized elements from armored and mechanized divisions throughout the continental United States.

During their 20-day rotation, the units referred to as the Blue Force split up into two battalion task forces. While one is engaged in live fire training on the northern portion of the fort, another task force conducts force-on-force maneuver battles in the southern part of the NTC. Towards the end of their rotation, the two task forces rejoin and engage in brigade operations.

To provide a worthy, realistic opponent for units involved in force-on-force training at the NTC, the U.S. Army created an Opposing Force (OPFOR). The OPFOR designated as the 32nd Guard's Motorized Rifle Regiment is constructed to represent the major element of a Soviet style motorized rifle regiment (MRR). This fictitious Soviet style unit is formed out of the U.S. Army's 177th Armored Brigade which is comprised of the 1st Battalion, 52nd Infantry; 1st Battalion, 63rd Armor; and the 177th Forward Support Battalion.

All three battalions are trained to portray accurately the elements of a typical Soviet Motorized Rifle Regiment (MRR) in both attacking and defensive modes of combat, outnumbering and overwhelming an opponent.

Rather than provide the OPFOR with standard Army vehicles which would detract from the realism, the appearance of their vehicles have been altered with fibreglass visual modification kits (VISMODs) to replicate various Soviet vehicles. The result has been a well trained, motivated and realistic adversary infamous for its prowess on the battlefield.

On the live fire area an army task force fully armed with live small arms, tank and artillery ammunition may have to attack or defend against yet another simulated Soviet style MRR. This time in the form of over 1,000 computerized, radio controlled pop-up targets that can simulate the appearance, thermal signature and fire power of a Soviet style MRR. Some of these targets have the ability to "shoot" back with simulated tank fire and Sagger anti-tank missiles.

The Air Warrior program at the NTC provides U.S. Air Force, Air National Guard and U.S. Air Force Reserve planes and crews to simulate close air support for both the OPFOR and Blue Force units.

The use of MILES (Multiple Integrated Laser Engagement System) has greatly enhanced training and realism at the NTC. OPFOR and visiting unit weapons are equipped with laser transmitters that shoot eye safe laser beams. Men and vehicles have receivers that respond to hits and near misses, disabling the weapons or "killed" targets. Linked to the MILES system are radio transmitters on player vehicles that transmit data on vehicle position, direction of travel, weapon firings and hits. This information, along with that supplied by mobile video crews is constantly relayed many miles back to the "star wars" building computer complex on main post. Information on the entire battle is recorded and becomes part of the visiting task force's take-home package to facilitate further training after departing the NTC.

Ever present on the battlefield and supplementing the MILES equipment are the Observer/Controllers (OCs) who affect non-direct fire casualties from artillery, mines, chemicals and air strikes. The OCs' main function however is to observe and analyze the performance of visiting units and advise and coach soldiers and officers during After Action Reviews (AARs) following each battle. The audio, video and computer capabilities at the NTC make it the most sophisticated battlefield training facility in the world today.

Although most training of U.S. Army units at the NTC has been structured toward defeating a Warsaw Pact threat to Western Europe, U.S. Army units deployed anywhere in the world benefit greatly from lessons learned at the NTC.

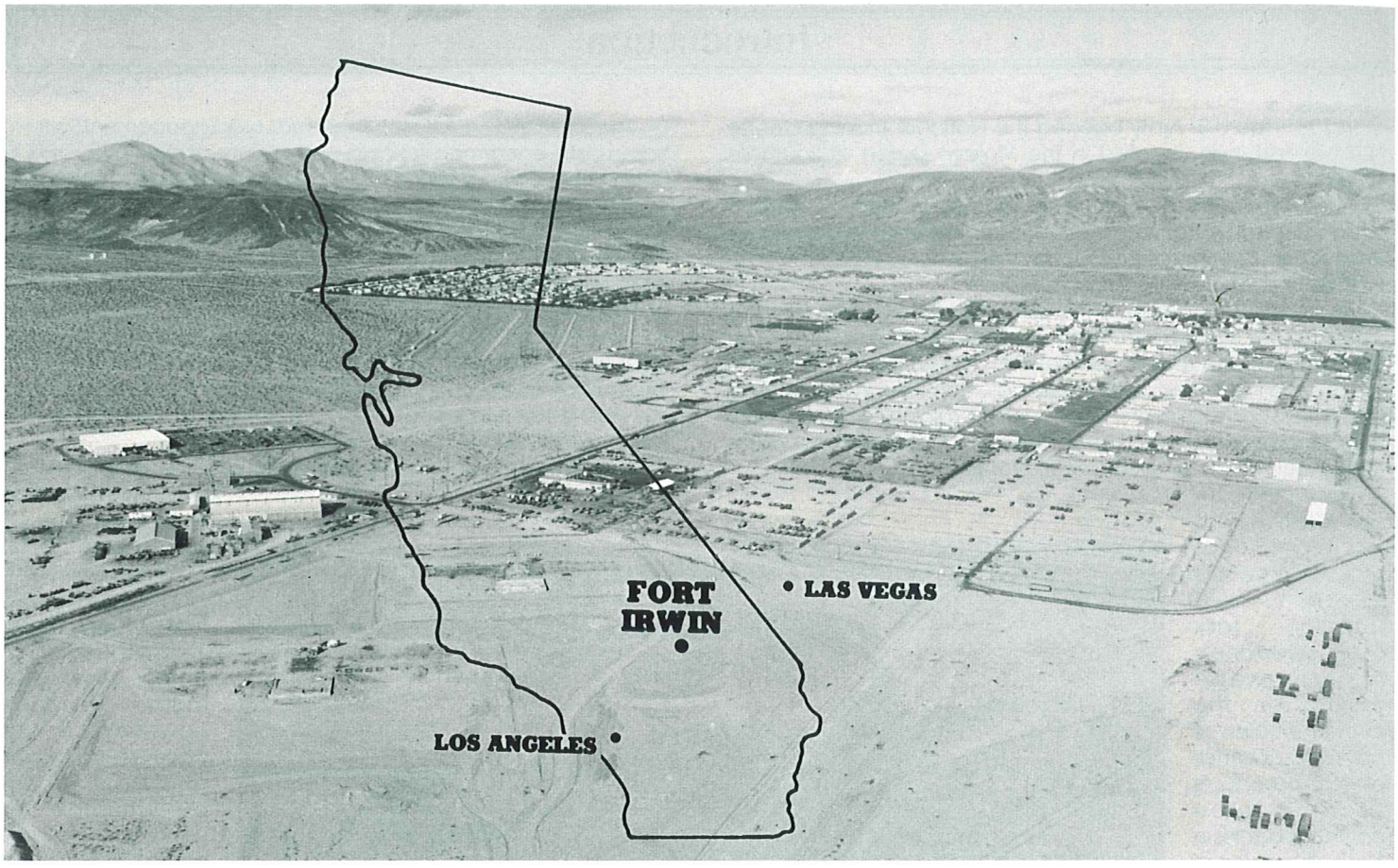
U.S. Army divisions such as the 24th Infantry, 1st Cavalry, 2nd Armored and the 3rd Armored Cavalry Regiment that were deployed to the deserts of the Middle East, have all trained extensively at the NTC. There can be no doubt that the experience gained on the desert terrain of the NTC has contributed greatly to their combat capability, and the success of Operation Desert Storm.

With the changing political and military conditions in Europe and the Soviet Union in particular, it is likely that the NTC's training emphasis on Air Landbattle doctrine may change. Whatever the furture mission of the NTC, its size, sophisticated instrumented battlefield, dedicated Opposing Force and professional training staff guarantee its' continued role on the leading edge of land warfare training.

ACKNOWLEDGEMENTS

The author would like to thank all the personnel of the NTC who tolerated his many visits. Special thanks go to Maj. John Wagstaffe and SFC Jaime Cavazos of the Public Affairs office, Maj. Russ Cleveland and the 1st Battalion, 52nd Infantry, the 1st Battalion, 63rd Armor and the Dragon and Cobra Observer/Controllers.

Greg Stewart



The U.S. Army's National Training Center (NTC) is located at Fort Irwin in the Mojave Desert between Los Angeles, California and Las Vegas, Nevada. (NTC photo)

First established as a World War II anti-aircraft training range, Fort Irwin has been used as a W.W.II internment camp, an armor and desert training center and a National Guard training area before the activation of the National Training Center.

Some areas of the NTC where modern U.S. Army Task Forces train today were first travelled by U.S. Army units in pursuit of Indians in the 1860's.

NTC ORGANIZATION

COMMAND GROUP

CENTER STAFF

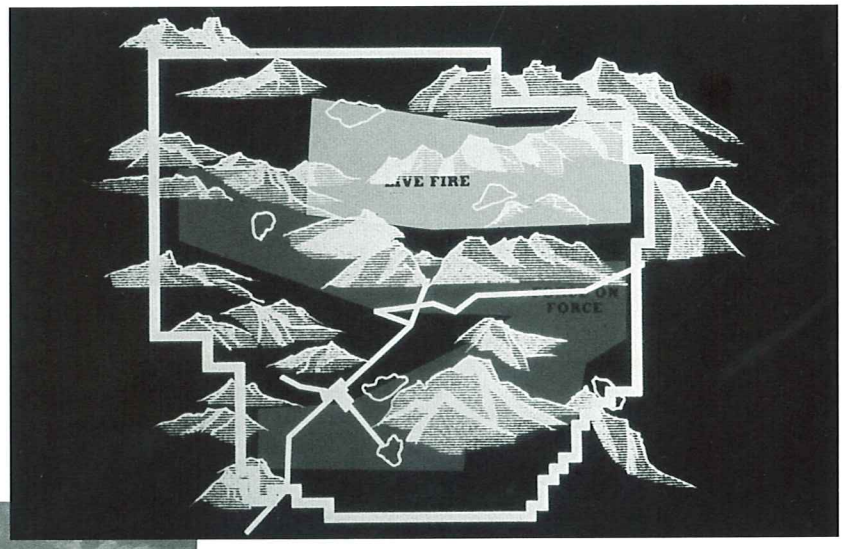
OPS GROUP
HEADQUARTERS
COMBAT TRAINERS
INSTRUMENTATION
SUPPORT
COMBAT TRAINERS

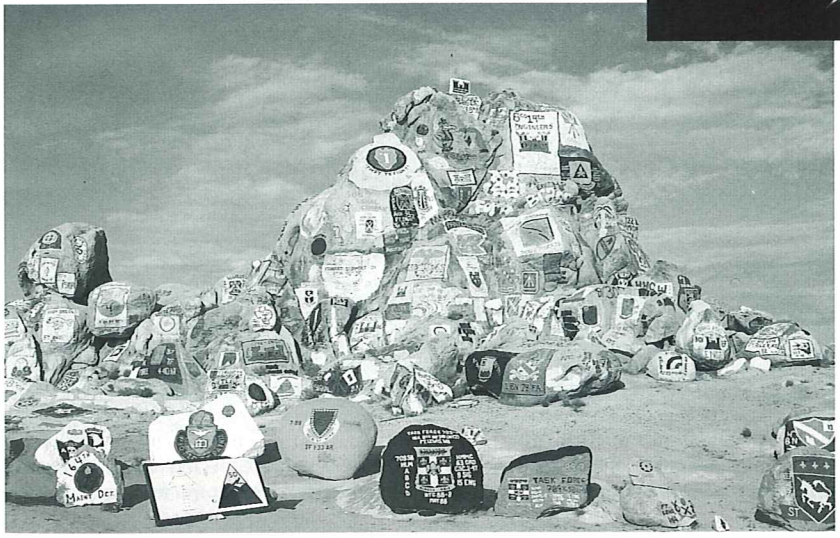
177TH AR BDE
HEADQUARTERS
1-52ND INFANTRY
1-63RD ARMOR
177TH FSB
FLTP
OPFOR ACADEMY
OPFOR

TENANT UNITS
MEDDAC
DENTAC
ISC
SUPPORT

GARRISON
GARRISON STAFF
NTC SUPPORT BN
DYNCORPCONTRACTOR
BASE OPS

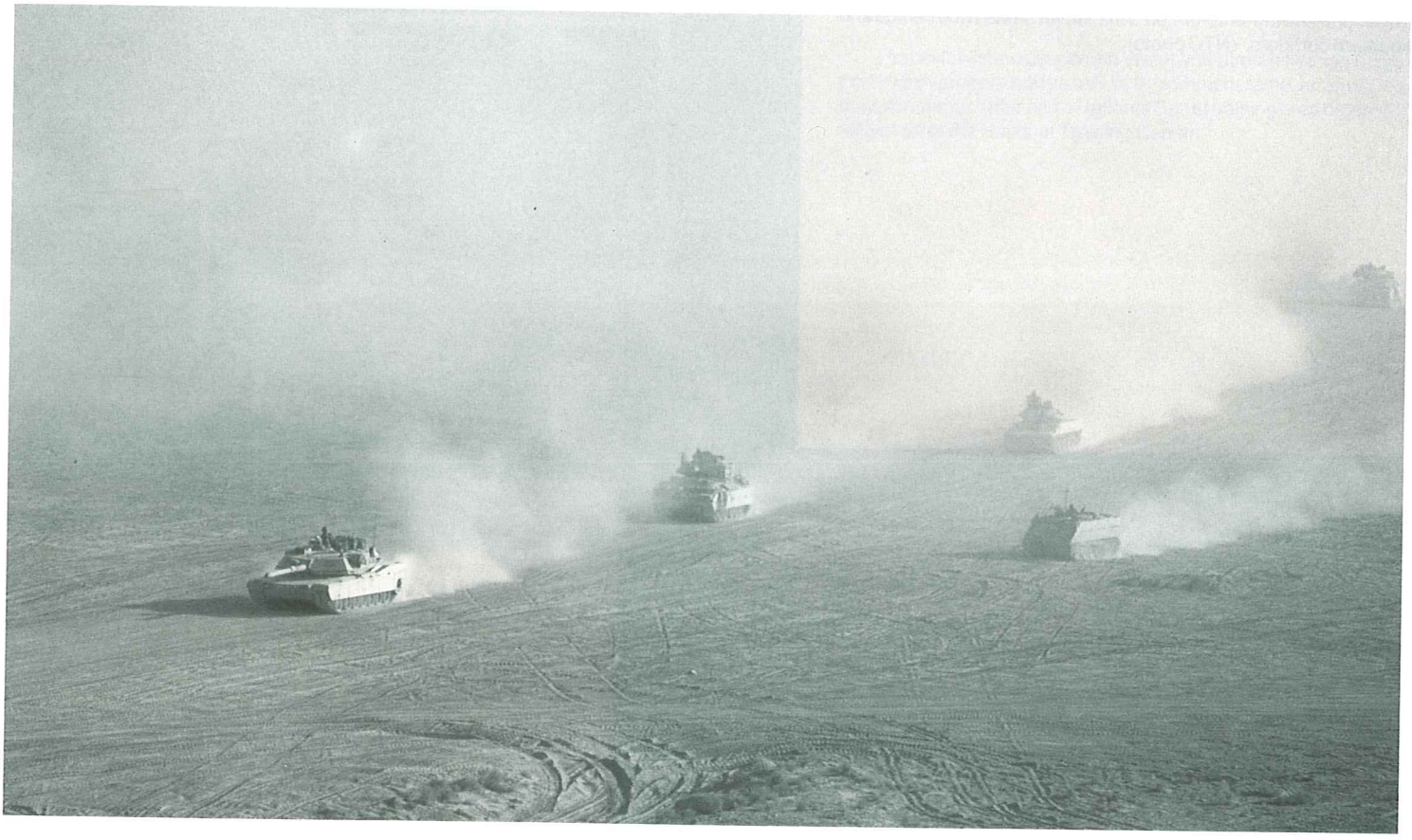
The NTC has three separate training areas, the live fire range in the north and the force-on-force maneuver areas in the central and southern corridors. (NTC photo)





One of the first sights encountered upon entering Fort Irwin is the "ROCKPILE" where units have painted their crests and insignias since WWII.

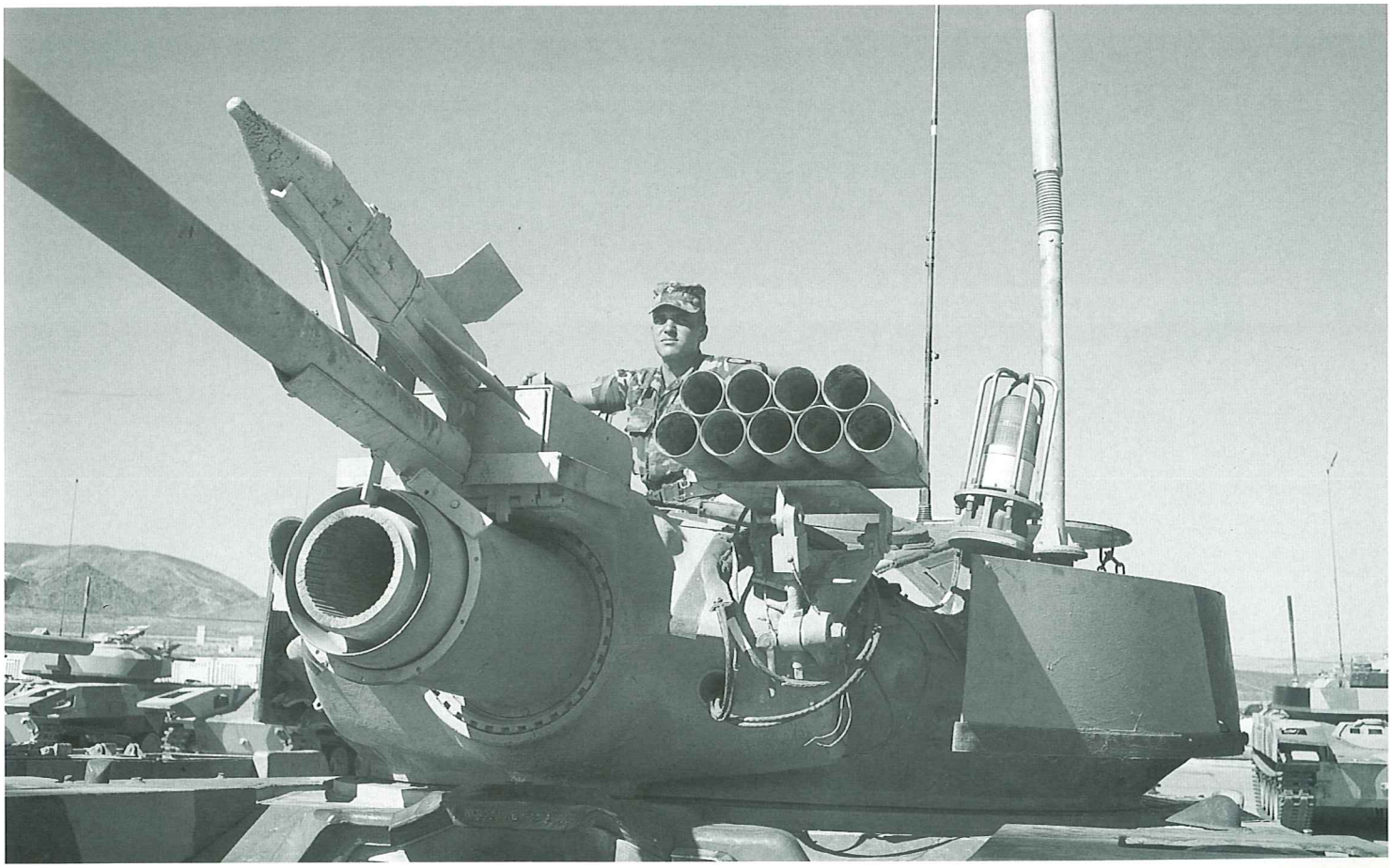
While the opposing force (OPFOR) and its equipment tend to be the most interesting aspect of the NTC, the main mission of the NTC is to provide tough, realistic combined arms training in accordance with U.S. Army air/land battle doctrine for brigade and regiments in a mid to high intensity environment, while retaining the training feedback and analysis focus at battalion/task force level. (NTC photo)



The OPFOR itself is only one part of a larger training team. The heavy and light brigades of the U.S. Army Forces Command that spend 20 day training rotations at the NTC are the most important element. 14 times a year, Army units from all over the continental United States come to the NTC. Each rotation brings in approximately 4000 soldiers and their equipment. These soldiers represent two battalion task forces, their brigade headquarters, and an appropriate slice of combat and combat service support personnel. (Michael Green photo)

The NTC makes extensive use of the Multiple Integrated Laser Engagement System (MILES) training devices. On this T-72 VISMOD are a bank of MILES Hoffman charges to simulate tank main gun fire. A velcro strip along the bottom of the turret contains laser detectors that when hit by laser anti-tank fire will render the main gun inoperable and trigger an orange flashing light located above the number 6 to indicate that the tank has been "killed".

OPFOR engineers replenish the Hoffman charges on the barrel of their Combat Engineer Vehicle (CEV).

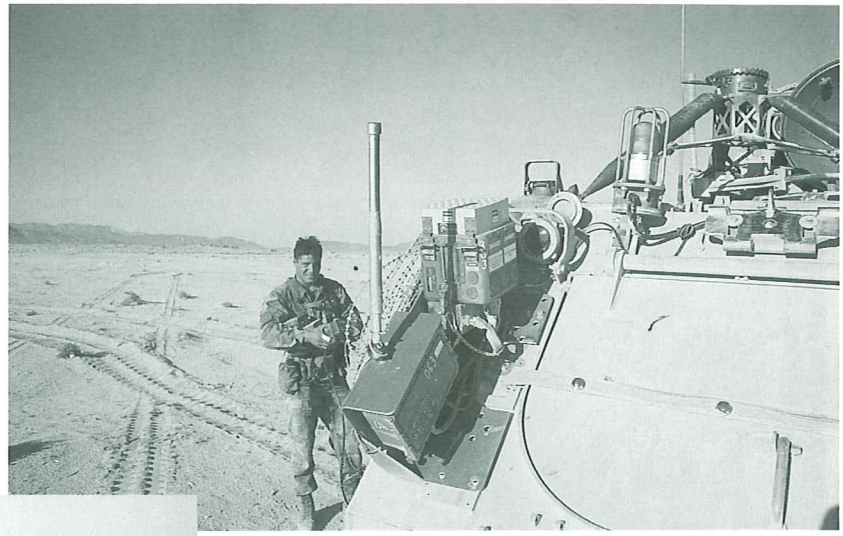


In the force-on-force maneuver areas, the firing of direct-fire weapons such as tank, anti-tank missile, anti-aircraft, and small arms is simulated by the MILES system. The eye-safe laser beams fired by MILES equipped weapons are coded so that only weapons lethal to that target can "kill" it. Once "killed", a target's weapon systems are rendered inoperable for the remainder of the battle.

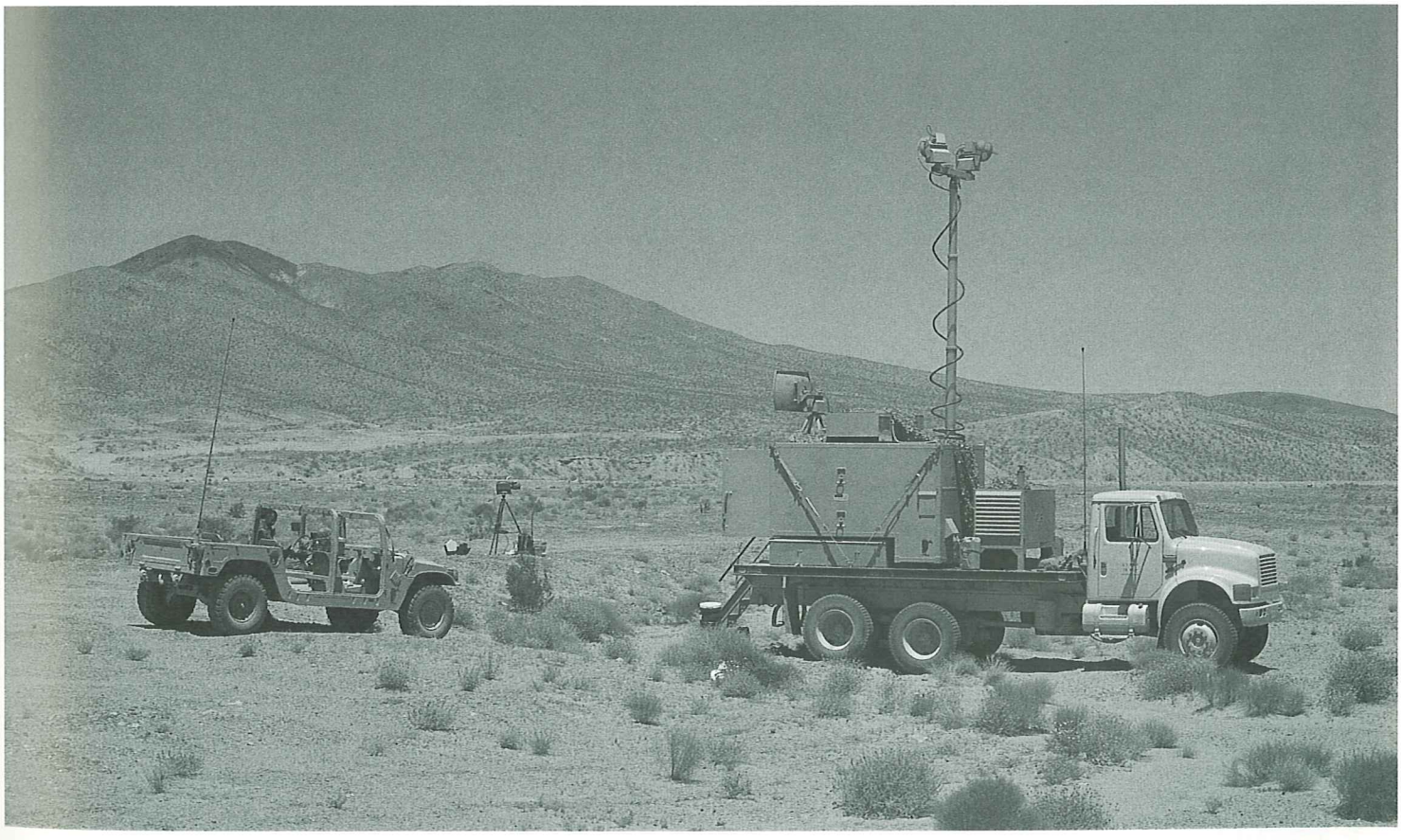
All player vehicles, their crews and infantry are equipped with MILES detectors.

The indirect fire of mortar and artillery is plotted. Casualties and damage to men and equipment in impact areas is calculated and administered by observer/controllers in the field or from the "star wars" computer complex at main post.

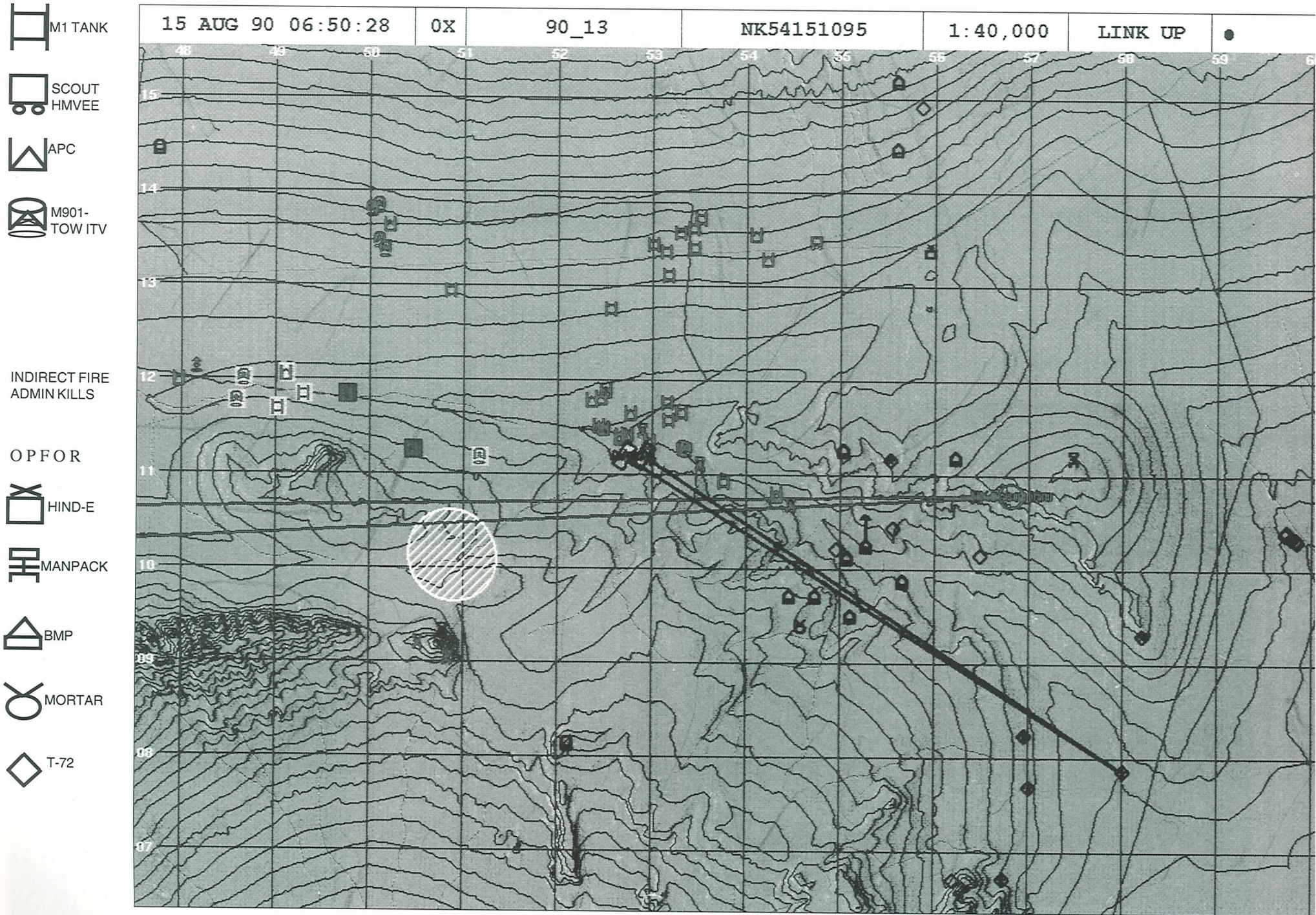
Mounted on the front of this M113 is a Combined Arms Training Integrated Evaluation System (CATIES) device. When activated by a radio signal from the "STAR WARS" building it will simulate artillery air bursts by firing many small explosive charges into the air above the vehicle being "killed".



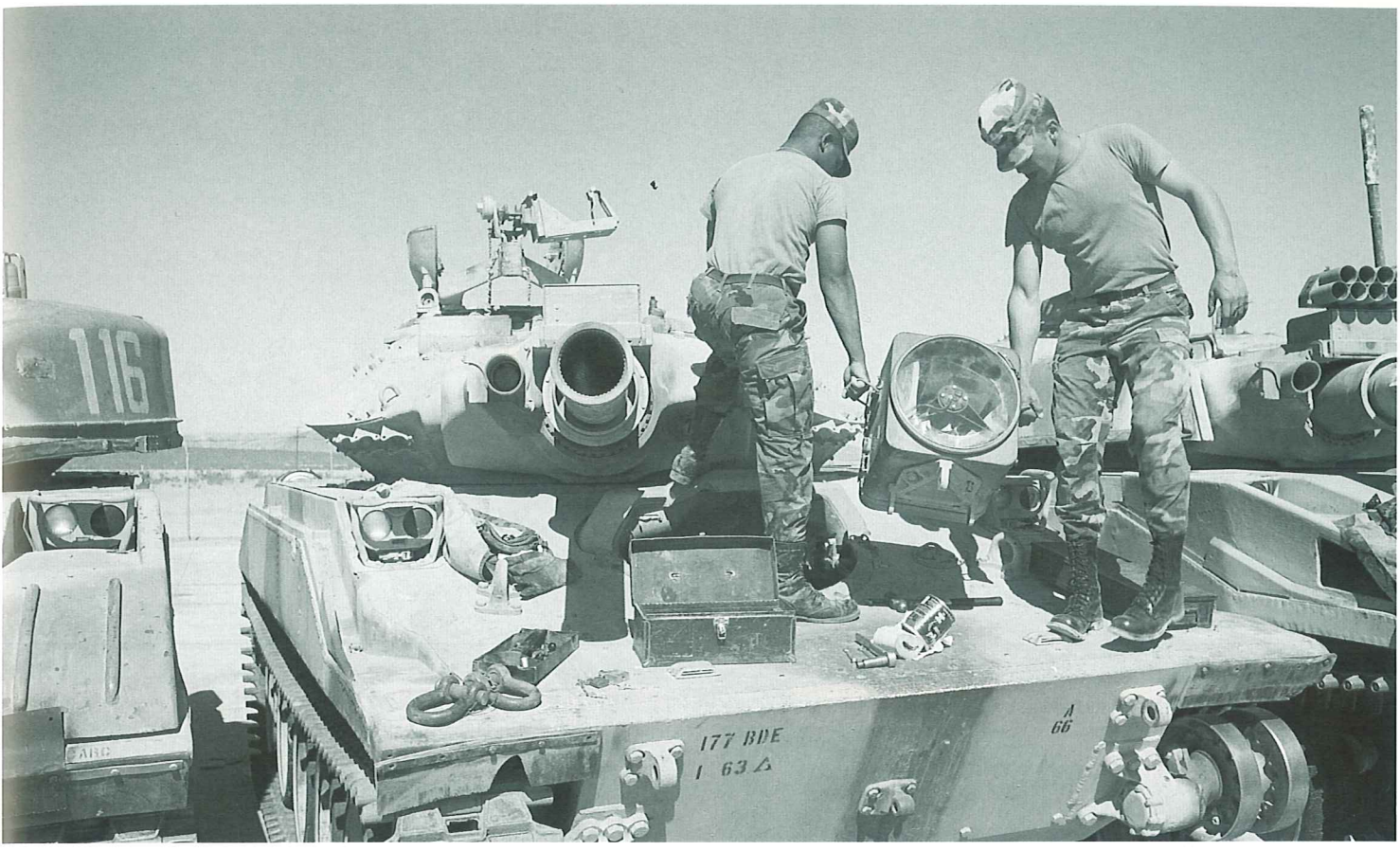
An Observer/Controller uses a hand held laser "GOD GUN" to test the MILES equipment on a Bradley. In addition to a "KILL" the MILES system is able to react to "HITS" and "NEAR MISSES".



Mobile video units and crews monitor the battlefield transmitting live T.V. coverage of the battles back to the "STAR WARS" operation center.

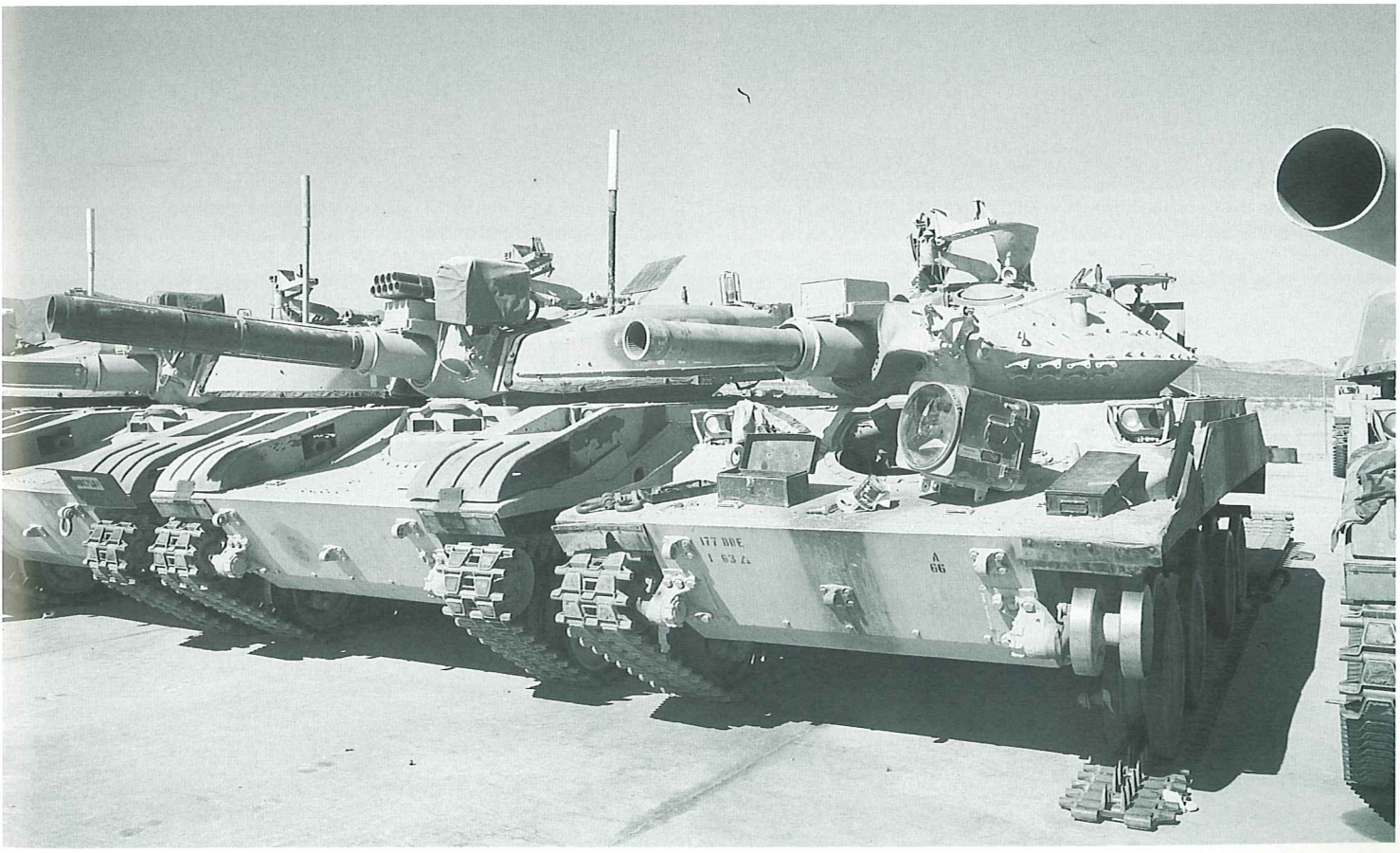


Recorded video pictures, tactical radio communications and data transmitted from the MILES systems in the field on type of vehicle, type of weapon fired, and number of rounds fired, can be packaged for transmission back to After Action Reviews (AAR) in the field.

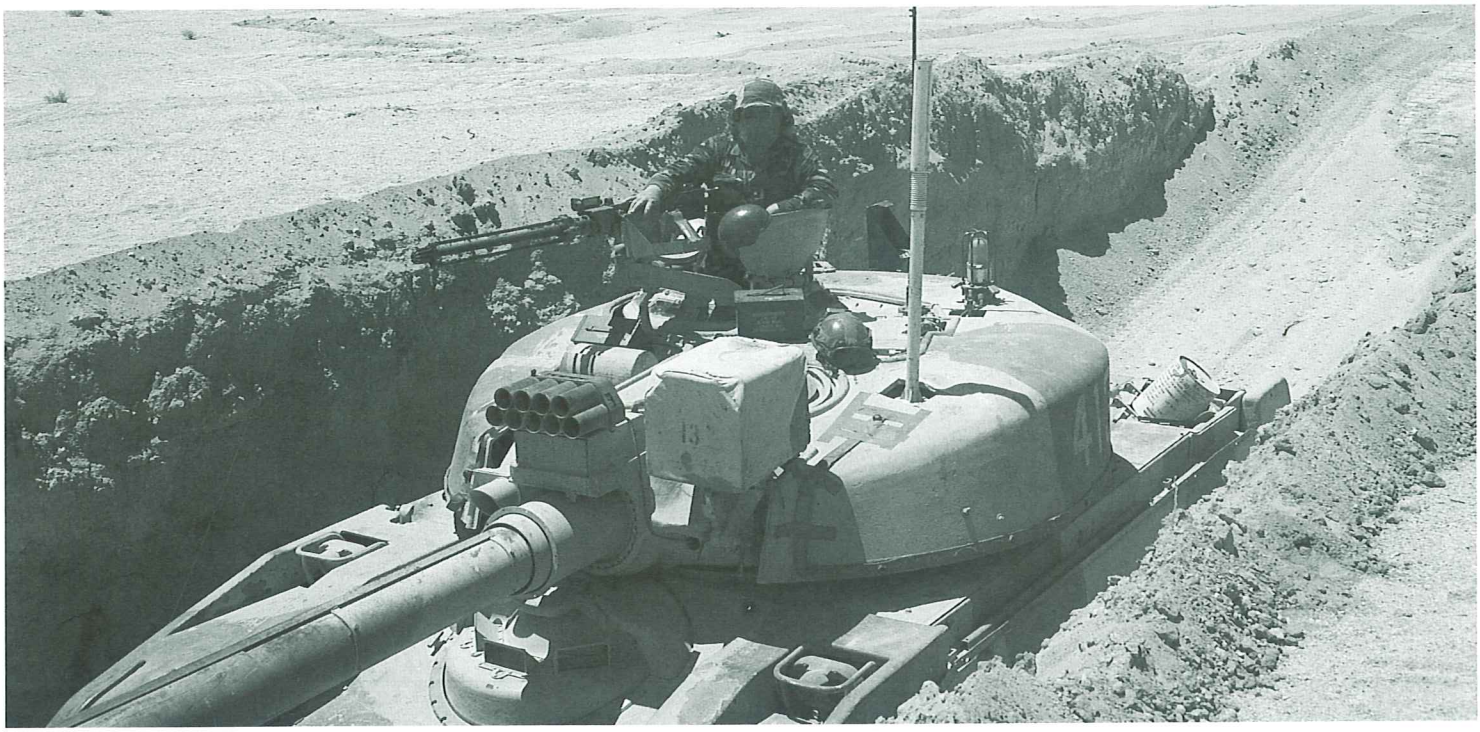


Since there are not enough Soviet style vehicles in U.S. Army on hand to equip an opposing force, U.S. M551 Sheridan light tanks and other U.S. Army vehicles have been visually modified with VISMOD kits to represent Soviet style vehicles.

A M551 in the 1st Battalion, 63rd Armor maintenance yard is stripped of unnecessary equipment before receiving a T-72 VISMOD kit.



An unmodified M551 next to an M551/T-72 VISMOD. The M551 is the most widely used VISMOD vehicle utilized for the T-72 main battle tank (MBT), BMP armored personnel carrier, ZSU-23-4 anti-aircraft vehicle, and the M1974 122mm self-propelled howitzer.



The turret of the M551 is completely hidden by the fiberglass T-72 MBT VISMOD Kit.

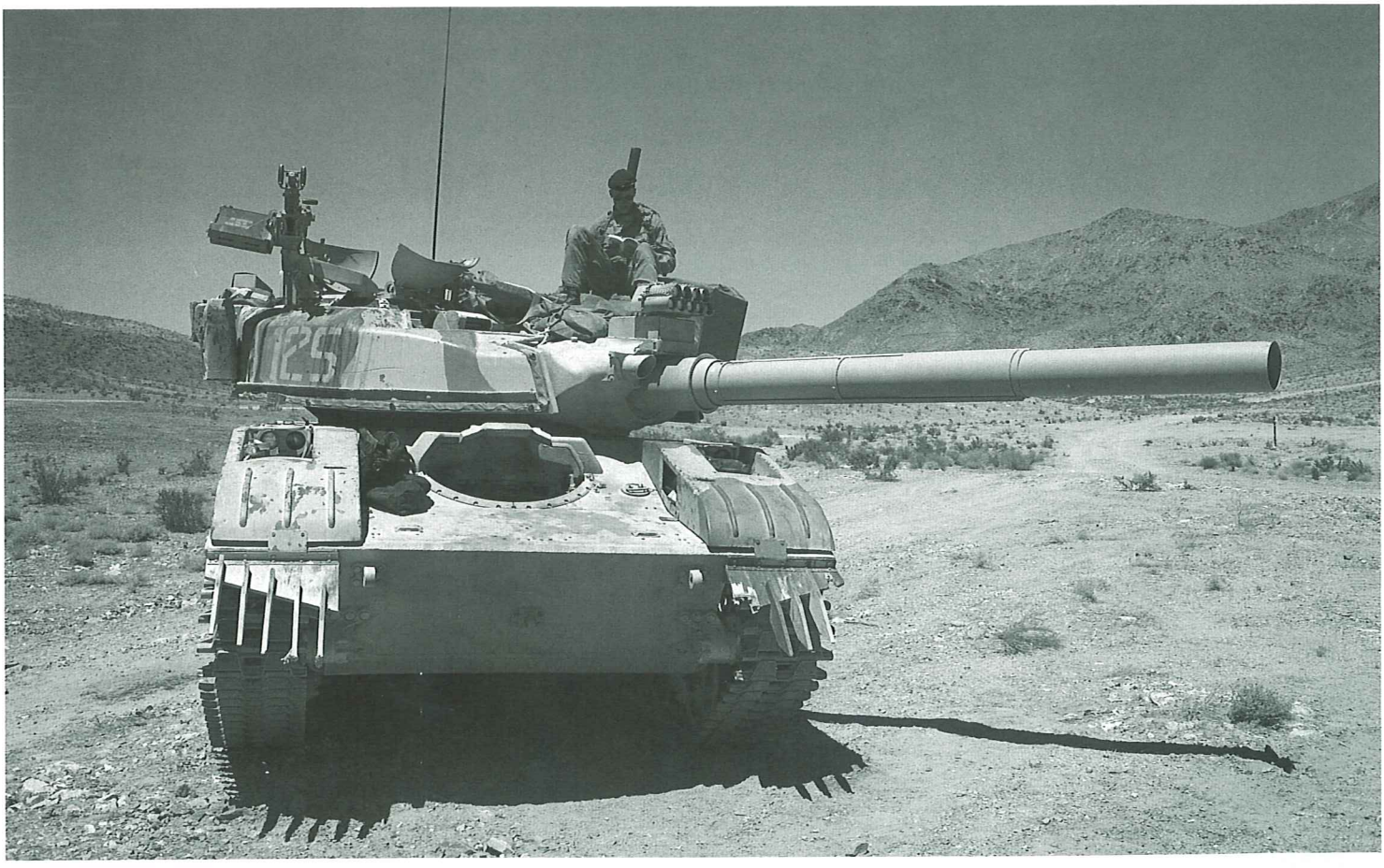
Fender extensions on the front of the M551/T-72 VISMOD further alter the appearance of the vehicle.

A side view of a T-72 VISMOD with olive-drab paint scheme used in the early 1980s. (Michael Green photo)

Lengths of plastic tubing reinforced with steel are used to simulate the T-72 MBT's 125mm main gun. (Michael Green photo)

Left side view of a M551/T-72 VISMOD of Co. D, 1st Battalion, 63rd Armor, with portion of main gun barrel missing.

Right side view of a M551/T-72 VISMOD. Some T-72 VISMODs have been upgraded to simulate T-80 MBTs. The killing range of the main gun MILES system has been increased from 2000 to 3000 m, and MILES detectors altered to simulate improved armor of the T-80 MBT.

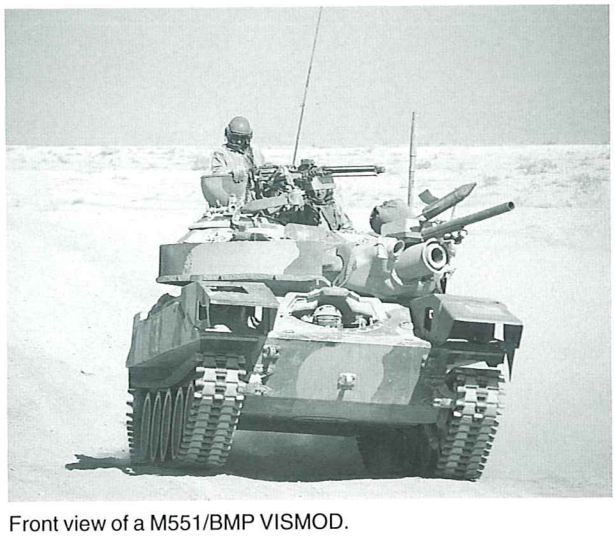


Front view of M551/T-72 VISMOD showing simulated mine plow. Only T-72s with these plows can clear a path through mine fields. If lost in battle the OPFOR might not be able to breech mined Blue Force defenses.

There are two types of BMP armored personnel carrier VISMODs in use by the OPFOR. One based on the M551, the other based on the M113 APC has the capability to transport infantry.

The M551/BMP VISMOD has been equipped with elongated front fender extensions in addition to turret modifications. Although not the most convincing of the VISMODs, at least it doesn't look much like a M551.

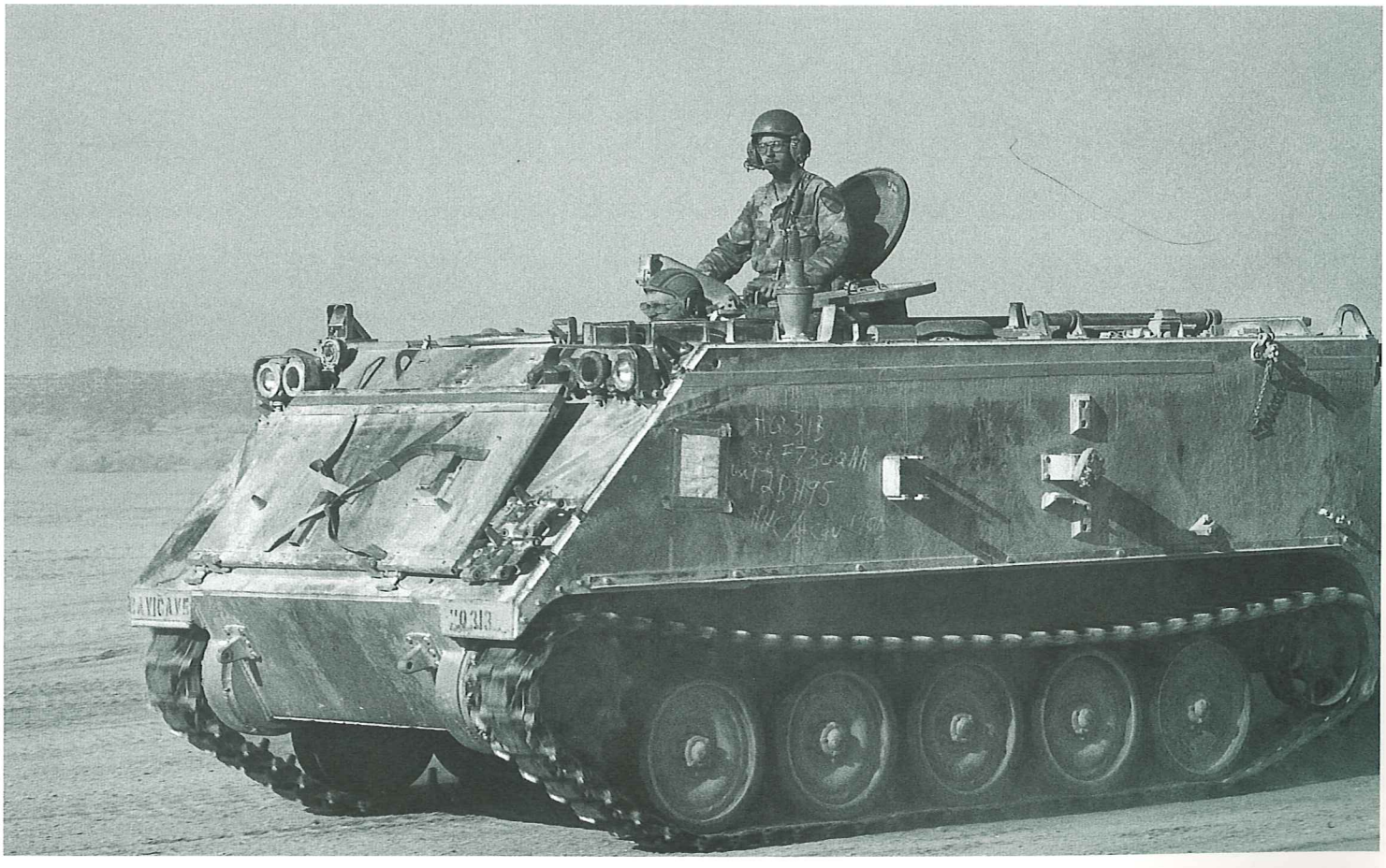
Rear view of M551/BMP VISMOD showing rear fender extensions. (Michael Green photo)



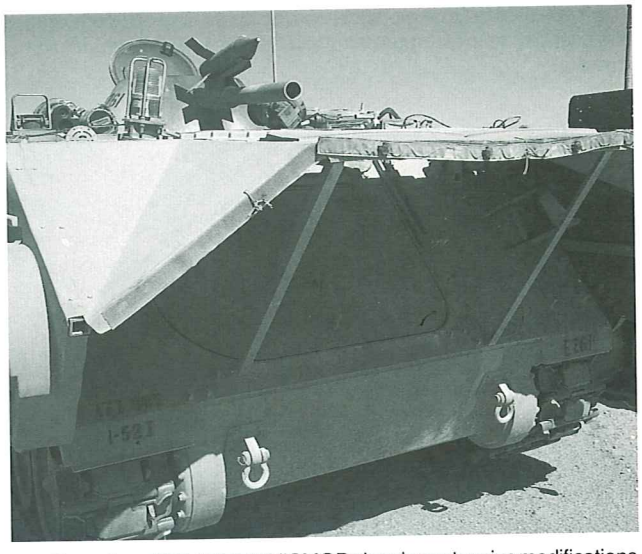
Front view of a M551/BMP VISMOD.

In addition to turret modifications the M551/BMP VISMOD has a simulated 73mm main gun barrel and Sagger wire-guided anti-tank missile.

Side view of M113/BMP VISMOD showing the VISMOD kit running the entire length of the vehicle.

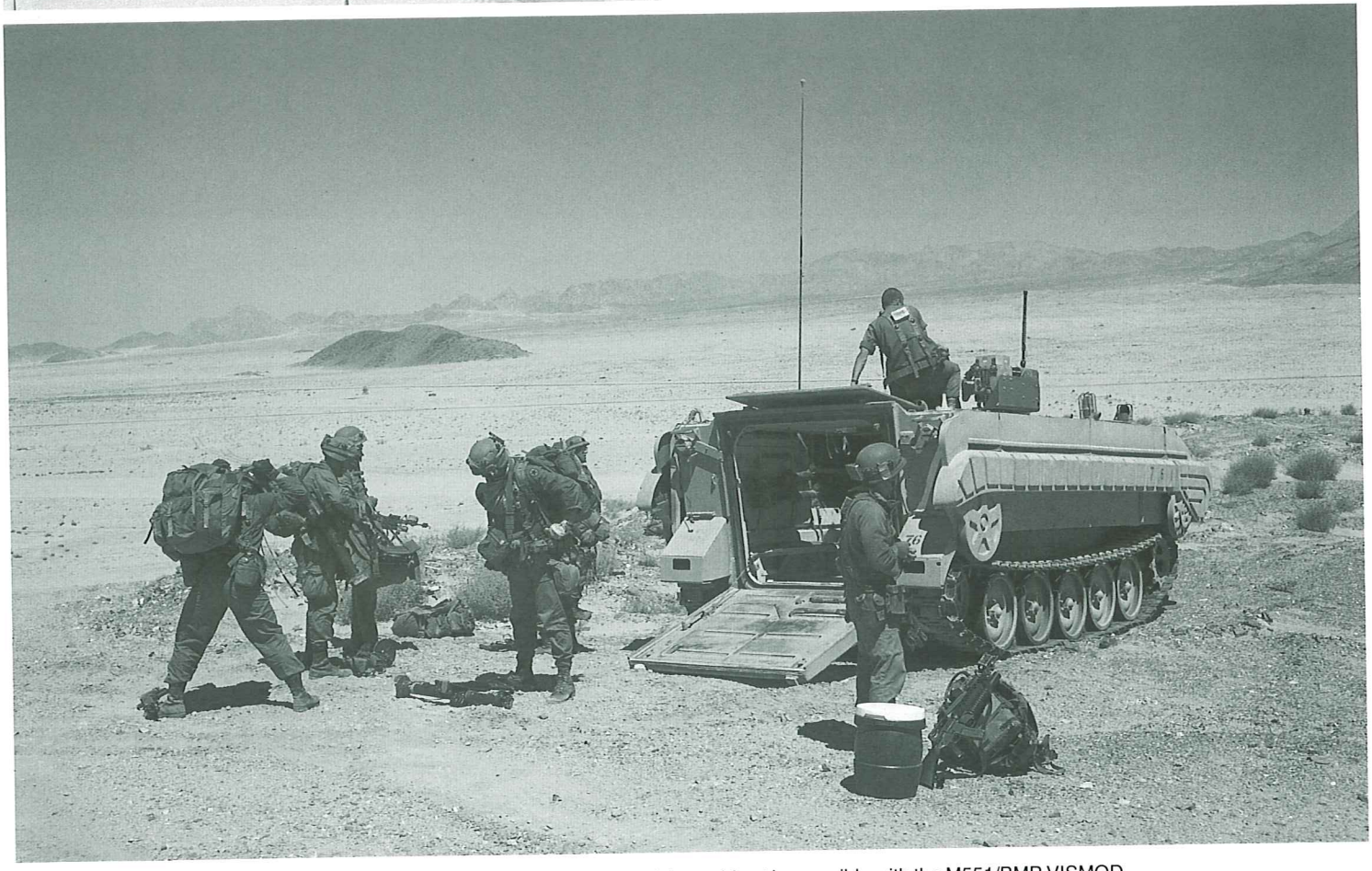


The M113 APC serves as the base for the M113/BMP VISMOD.



Front view of M113/BMP VISMOD showing extensive modifications to front of the M113.

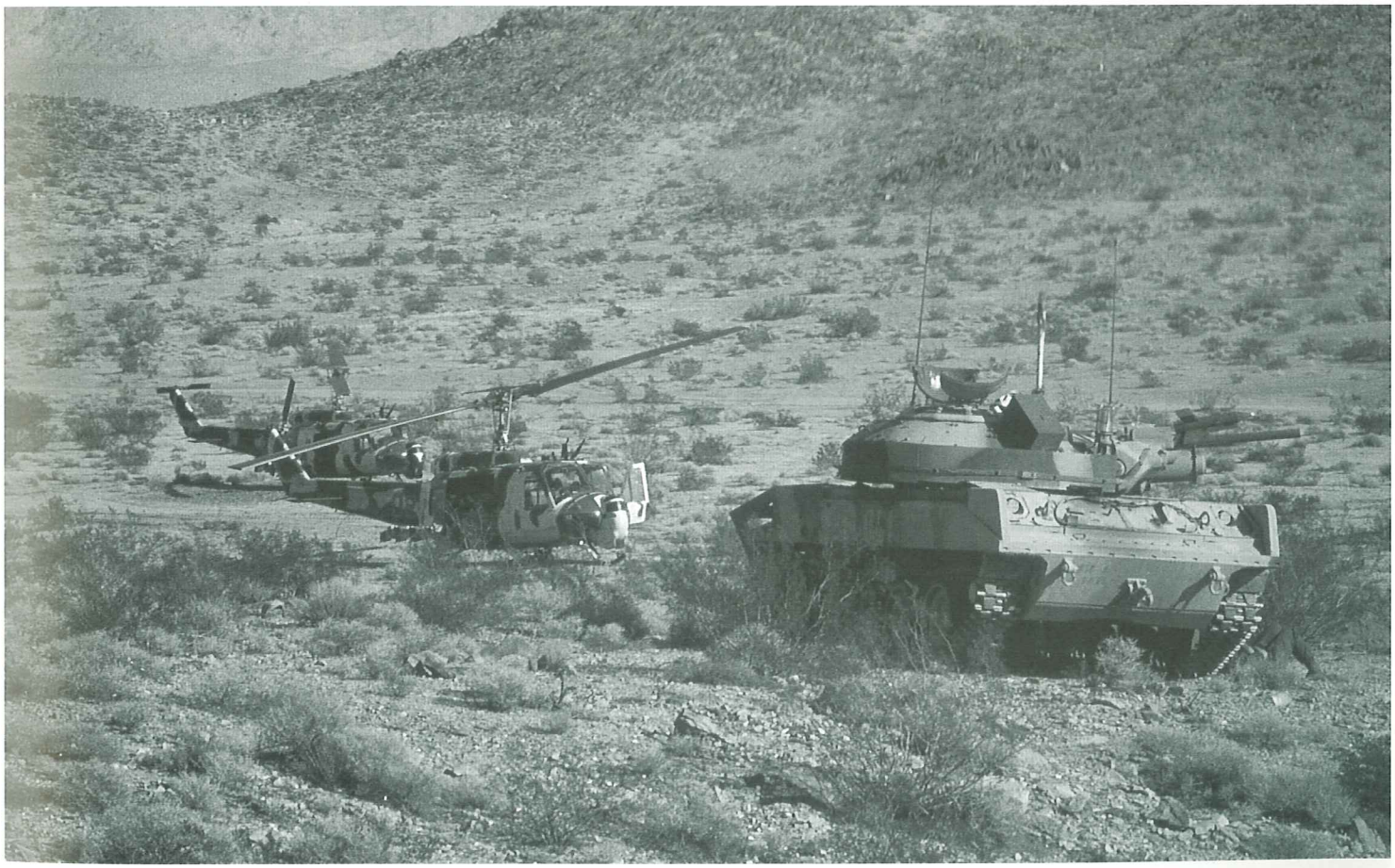
Detail of M113/BMP VISMOD showing turret, gun barrel and Sagger missile.



The M113/BMP VISMOD allows the OPFOR to carry infantry into battle, which would not be possible with the M551/BMP VISMOD.

The M998 also serves the OPFOR as a smoke generating vehicle, masking many OPFOR attacks in thick blankets of dense smoke. (Michael Green photo)

One of the most interesting VISMODs used at the NTC is the Mi-24 Hind gunship VISMOD. (Michael Green photo)



Four UH-1 Huey helicopters were modified to represent this powerful and deadly weapon system at the NTC. The old Hueys have not only been modified to resemble the appearance of a Soviet Hind, but also the fire power, lending to better training for the rotational units that come to the NTC for training. (Michael Green photo)

The skill of the pilots combined with the fire power of the Hind can be deadly for the troops that come to the NTC for training. The Hinds come equipped with a MILES system that simulates the Soviet AT-6 SPIRAL anti-tank missile, the 30mm cannon and the 57mm rockets as found on the real thing. (Michael Green photo)

The pilots that fly the false Hind gunships are unique in the U.S. Army because of the training in Soviet tactics they receive.

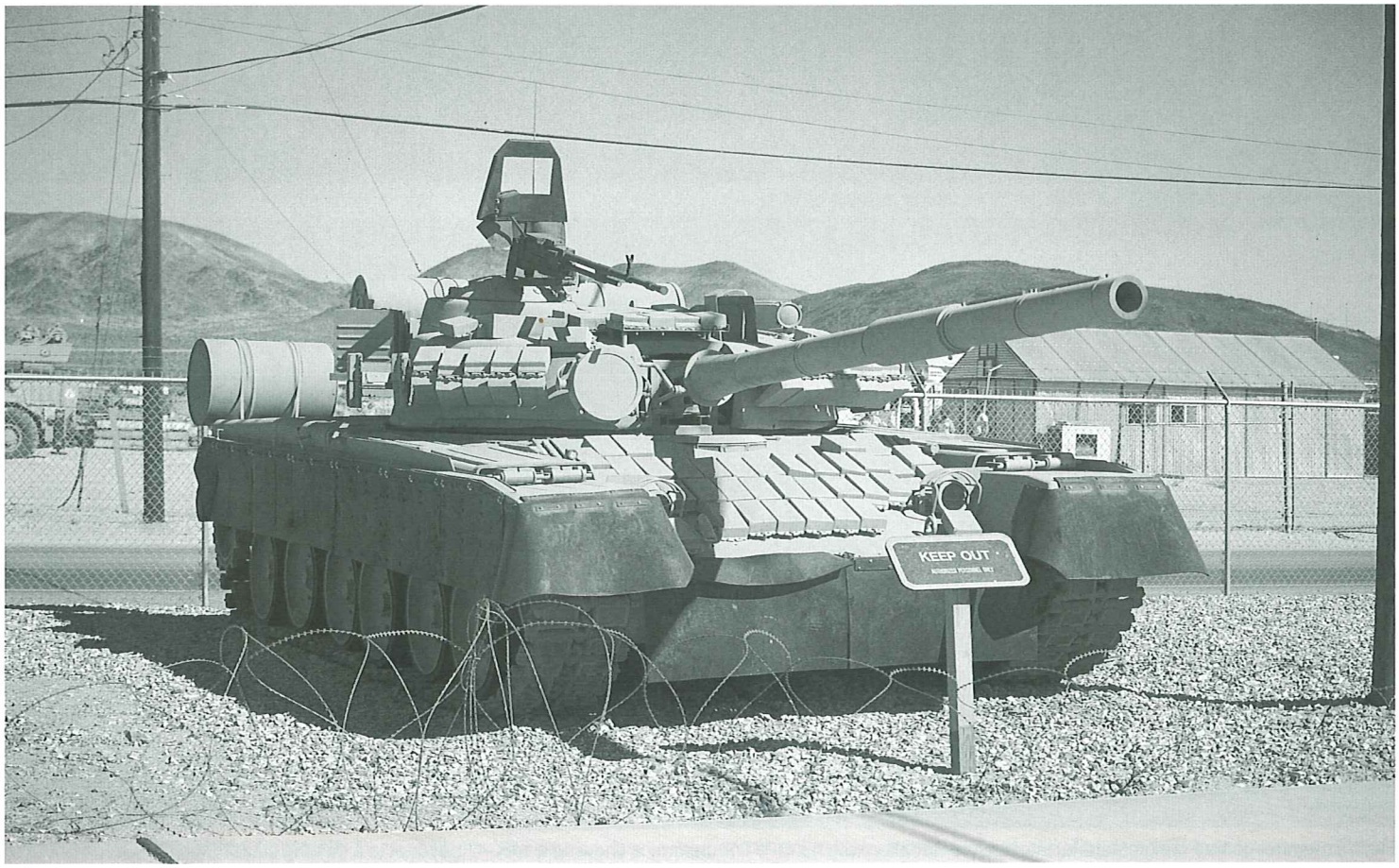
A HIND VISMOD flies past a 4th Infantry Division M113. The terrain in the background is obscured by the dust and smoke of hundreds of maneuvering vehicles.

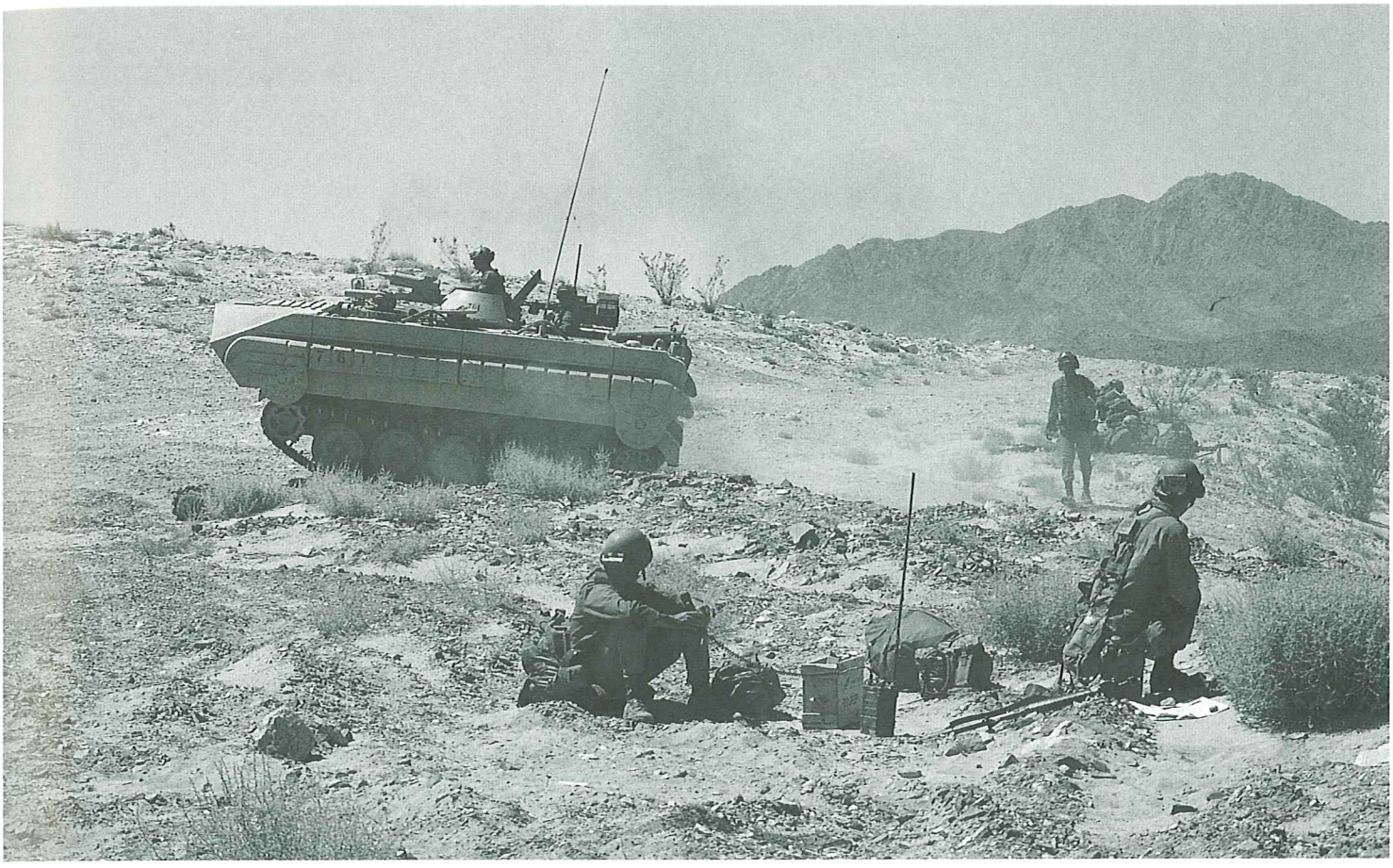
The men at the Foreign Material Intelligence Battalion and Training detachment who are in actual control of all foreign weapon systems at the NTC conduct many hundreds of classes to American soldiers on Soviet weaponry even giving some the chance to fire Soviet weapons. (Michael Green photo)

The Foreign Material Intelligence Battalion also maintains a display of Soviet military vehicles such as the BRDMs and ZSU-23-4.

Here a member of the Foreign Material Intelligence Battalion with his OPFOR uniform is showing an AK-47 bayonet to a training class. (Michael Green photo)

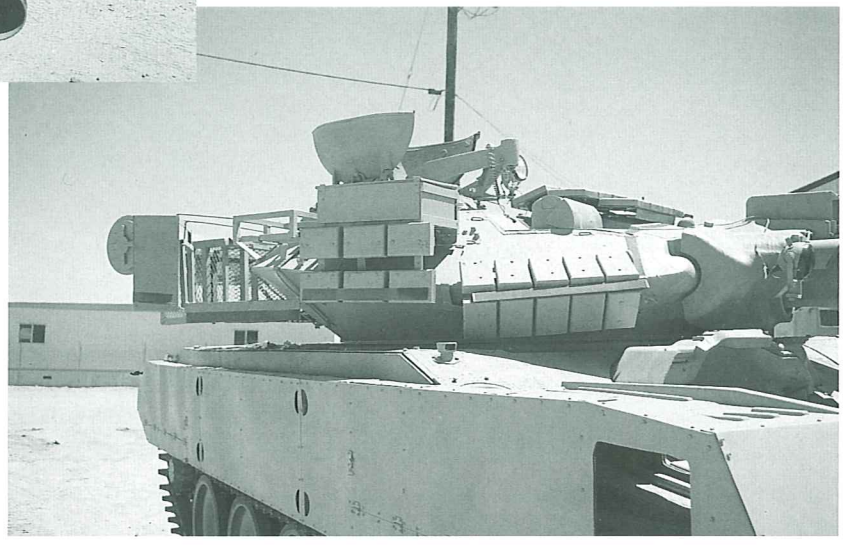
Also at the Foreign Material Intelligence Battalion display are full scale plastic models of a T-80 MBT, a T-72 MBT, and a 152mm SP howitzer.



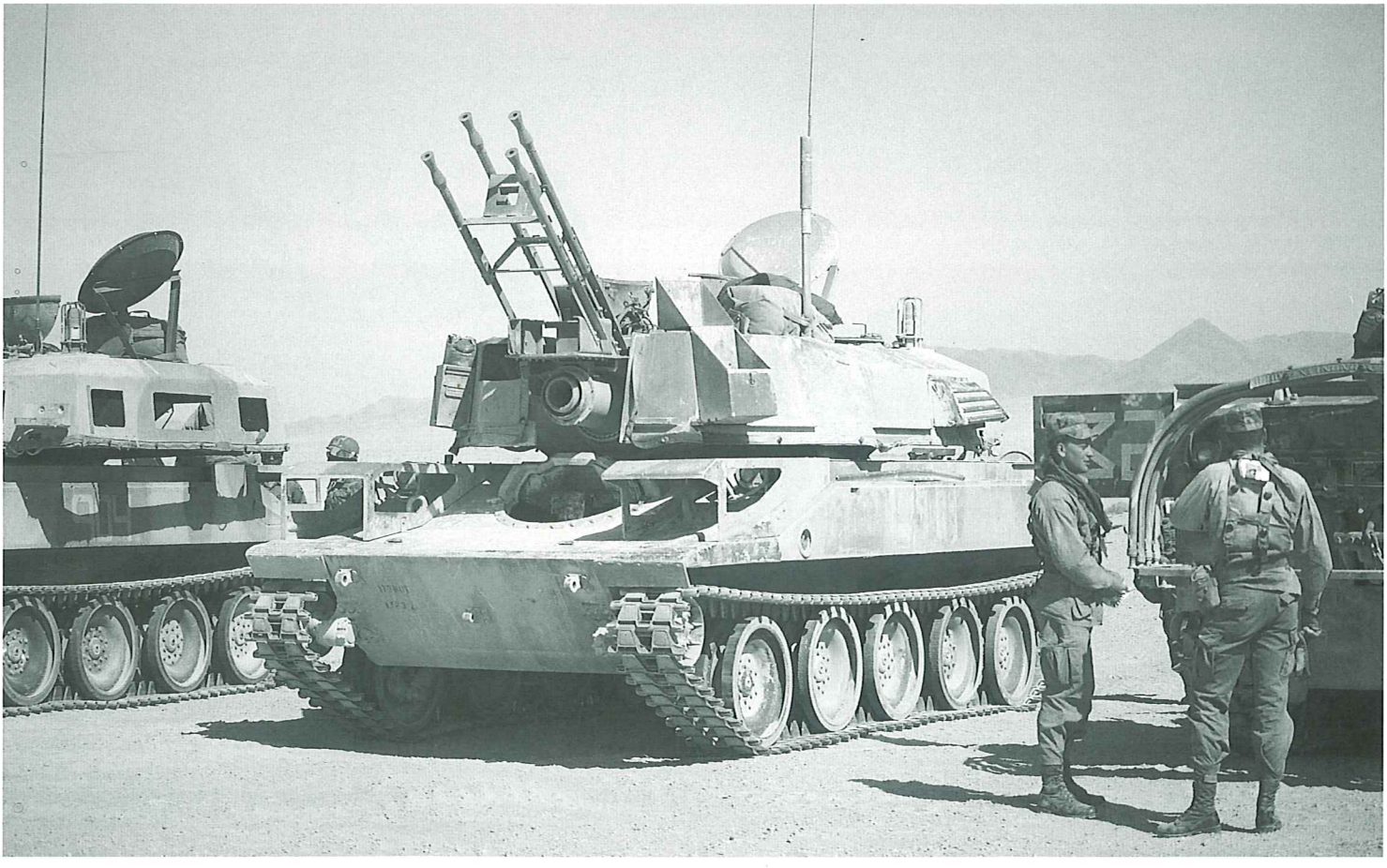


The M113/BMP VISMOD can be MILES "Killed" but does not have the ability to "Kill" with its mock main gun or Sagger missile.

The M113/BMP VISMOD allows soldiers to exit from the top and rear of the vehicle. The Dragon anti-tank launchers shown in this photo allow dismounted infantry an anti-armor role.



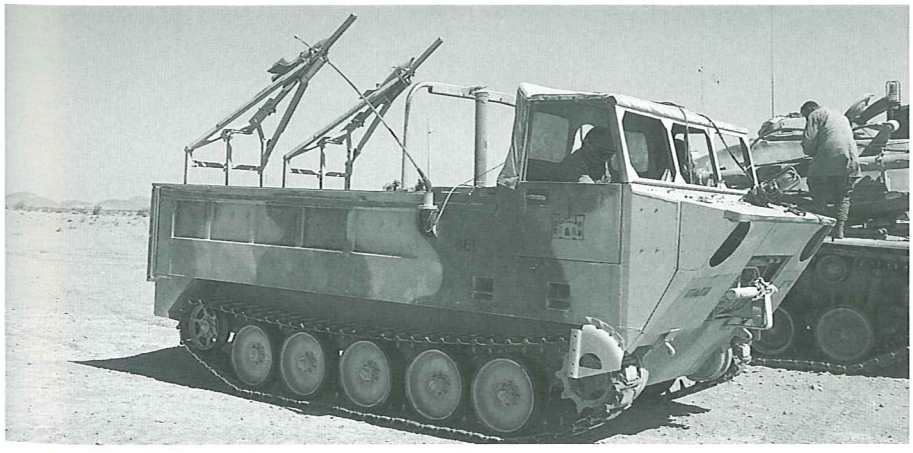
The NTC has plans to update its OPFOR VISMOD fleet with M551/T-80 MBTs and M551/BMP-2s. The M551/T-80 shown here has simulated reactive armor on its hull and turret.



The M551 also has been modified into the ZSU-23-4 self-propelled anti-aircraft gun system.

Turret modifications to the M551 for the ZSU-23-4 are quite extensive.

The OPFOR air defense makes use of the Chaparral missile system to replicate the Soviet SA-13 surface to air missile system, organic to a Soviet style MRR.

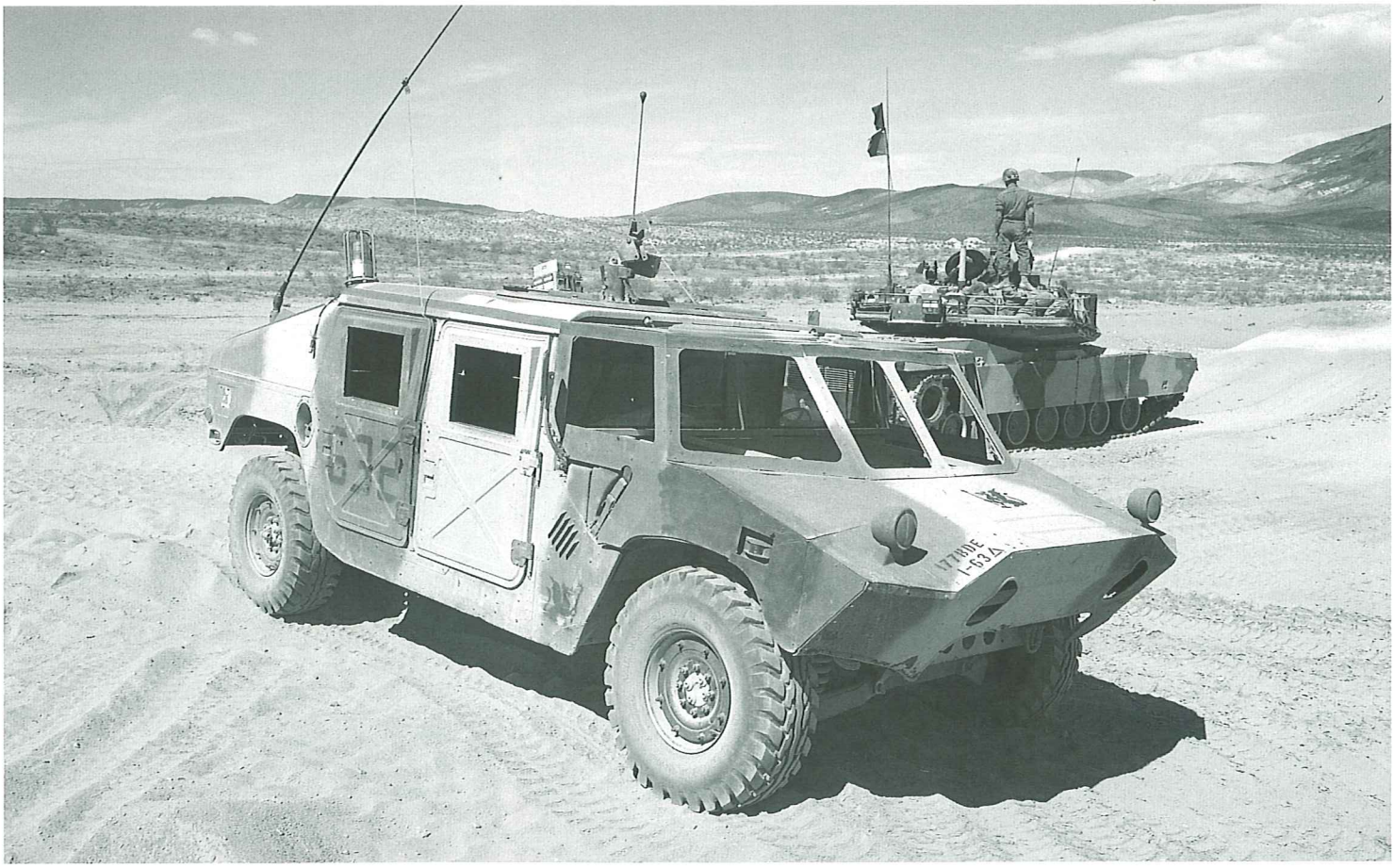


The M548 tracked cargo carrier has been modified to represent the Soviet M1979 line-charge, mine-clearing vehicle used by Soviet engineer companies.

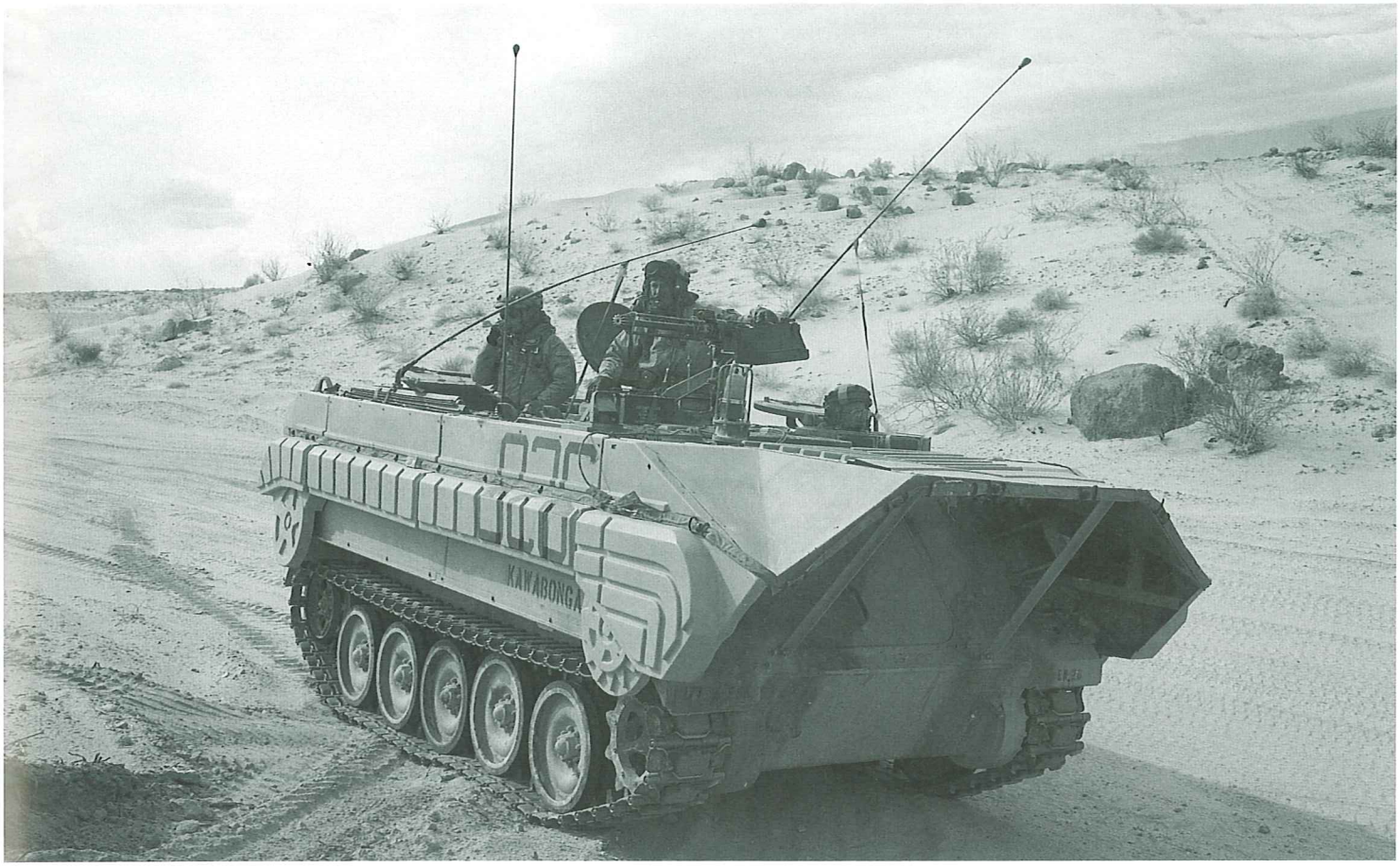
The M548 is also used by the OPFOR engineers as a VISMOD Soviet GMZ armored mine layer.

The front roof and windshield of the HUMMER has been extended to give it the general appearance of a BRDM.

A M998/BRDM VISMOD with a TOW (Tube Launched, Optically tracked Wire guided) anti-tank missile launcher moves out in front of a mixed group of OPFOR vehicles. This VISMOD simulates the BRDM-2 with SPANDREL AT-5 anti-tank missiles.

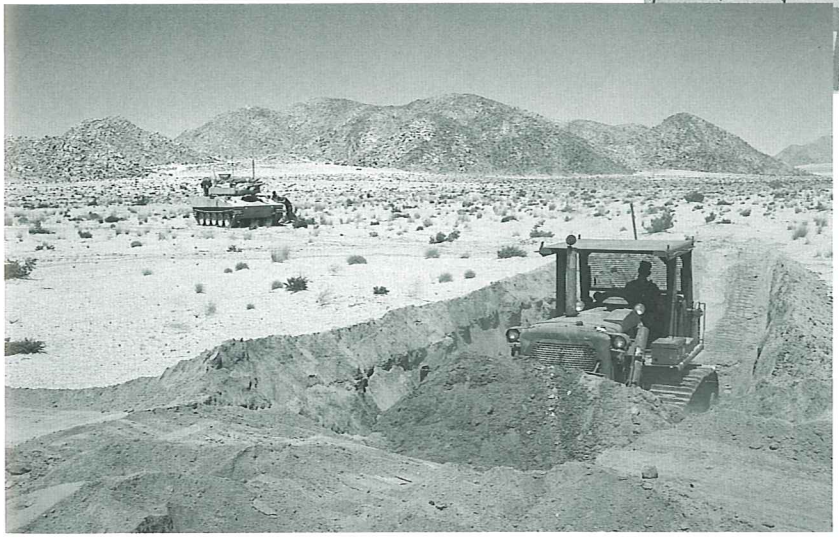


One of the newer VISMOD additions is the BRDM-2 Amphibious Scout Car based on the M998 High Mobility Multipurpose Wheeled Vehicle (HMMWV) (HUMMER) or (HUMMVEE). (Michael Green photo)



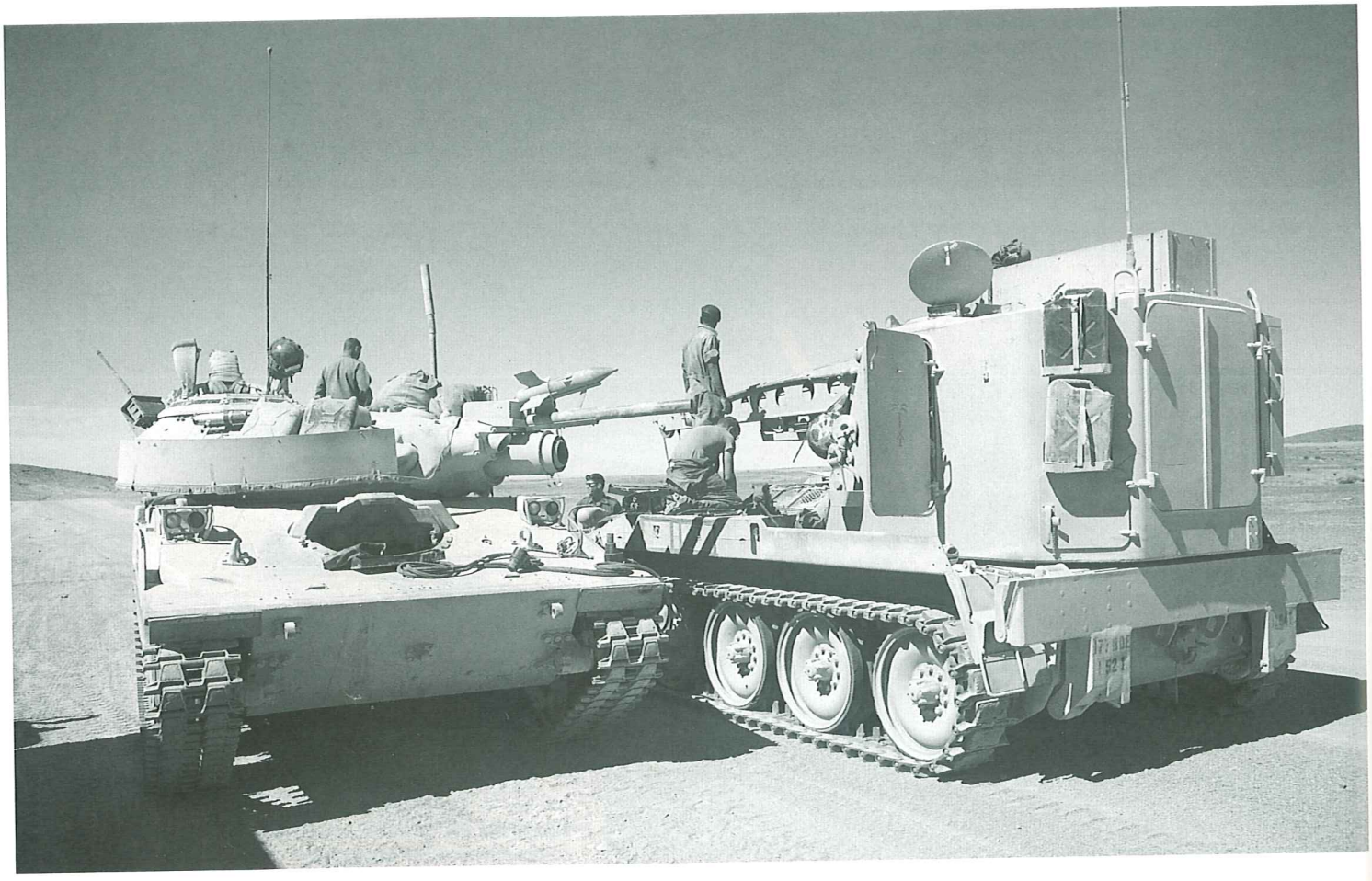
The OPFOR's 87th Engineer Company fields a turretless M113/BMP VISMOD simulating a BMP Engineer Vehicle that is used as both a command vehicle and a troop carrier.

The OPFOR's 87th Engineer Company conducts many specialized operations to replicate Soviet Combat Engineer tactics. These include Engineer Reconnaissance Patrols, Movement Support Detachment Operations and a Mobile Obstacle Detachment unit.



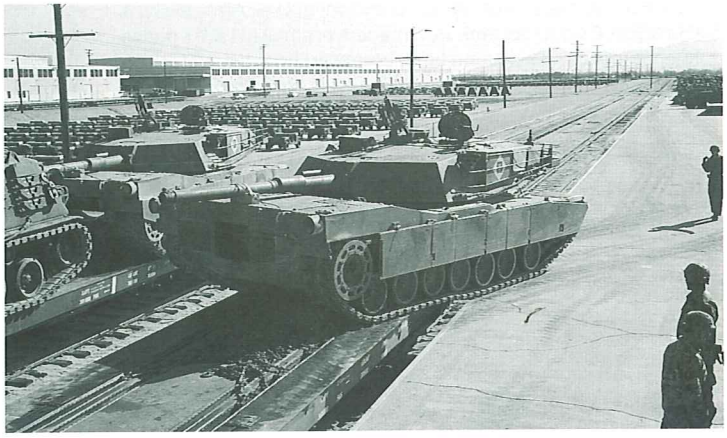
An OPFOR engineer using a bulldozer prepares a defensive position for a M551/BMP VISMOD. Lacking specialized engineer equipment the OPFOR relies heavily on augmentee engineer companies and their equipment.

The OPFOR is supported in the field by the 177th Forward Support Battalion comprised of a Headquarters and Headquarters Company, the 164th Smoke and Chemical Company, the 177th Combat Electronic Warfare Intelligence Company, 87th Engineer Company and Company D (DS Maintenance).

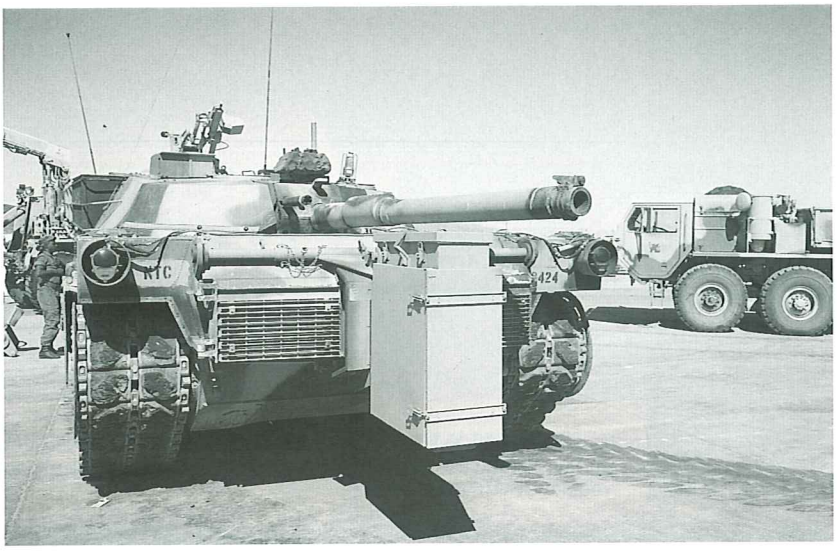


OPFOR soldiers must remain proficient at U.S. Army skills. A 1st Battalion, 63rd Armor tank crew maneuvers their M1 MBT during gunnery practice. This same tank, borrowed from the NTC draw yard, will be manned by a Blue Force crew to fight the OPFOR.

In addition to their OPFOR role, both the 1st Battalion,63rd Armor and 1st Battalion, 52nd Infantry must train extensively on regular US Army equipment.

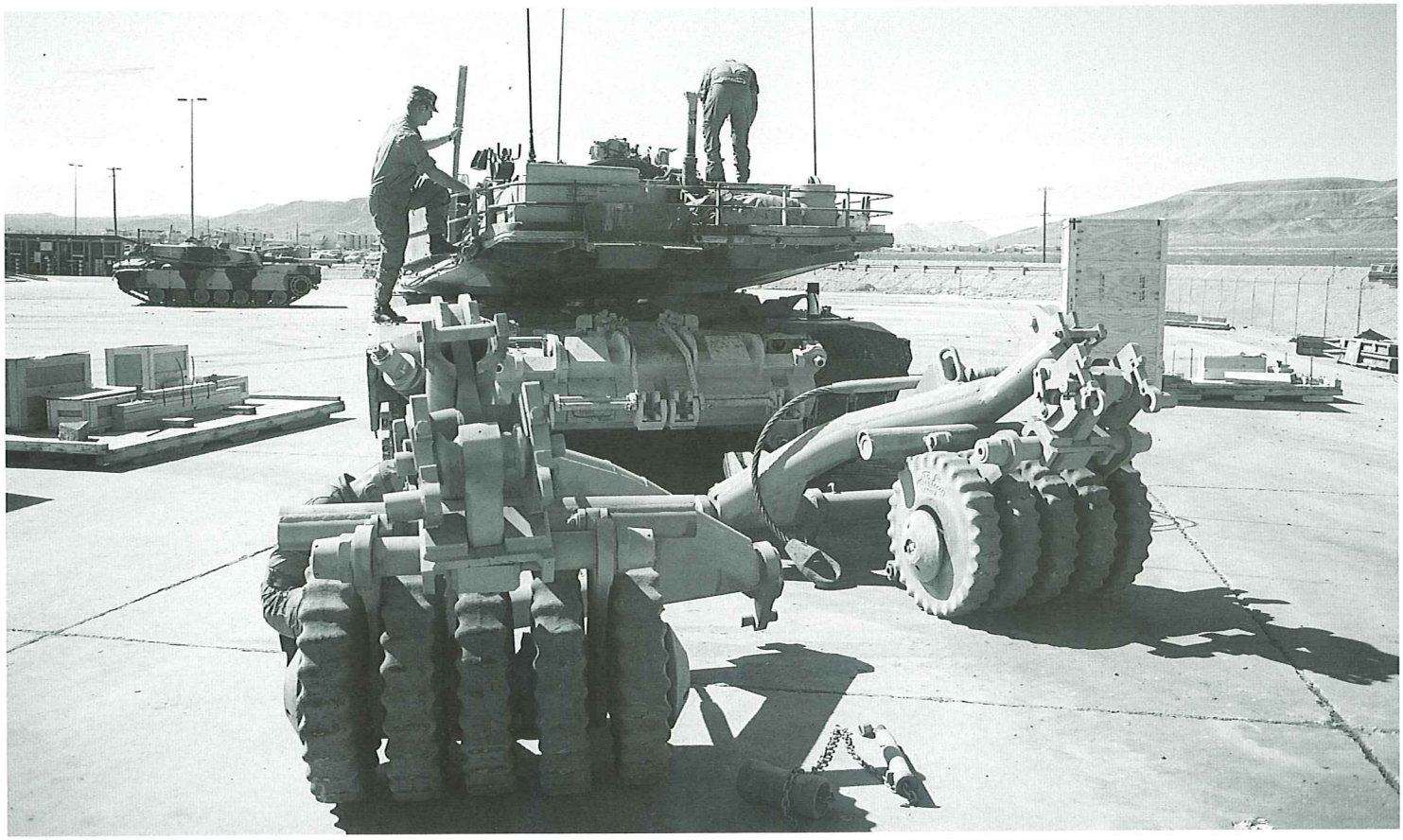


U.S. Army units trained at the NTC use a mix of NTC based vehicles and their own during a rotation. The vehicles they bring with them must be shipped by rail and unloaded near the NTC.



The box on the rear of this mine plow equipped M1 MBT dispenses markers to indicate the path cleared through the mine field.

Some 1st Battalion, 63rd Armor M1 MBTs have been fitted with kits to allow them to use mine plows and rollers intended for M60 MBTs.



The OPFOR sometimes utilize mock Soviet MT-12 100mm anti-tank guns. The MT-12s are towed in the field by MT-LBs or M998/BRDMs.

The MT-LB was put into Soviet military service in late 1960s. Much like the American-built M-113 armored personnel carrier, the MT-LB serves in a wide variety of different roles and versions including prime mover, command vehicle, radar carrier version, repair vehicle, ambulance, anti-aircraft vehicle, etc.

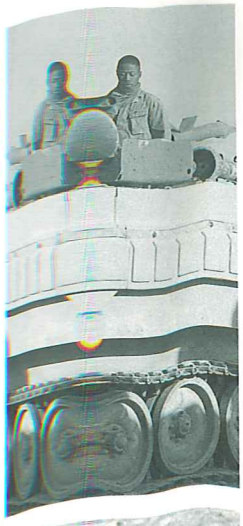
The most numerous Soviet-built vehicle at the NTC and the only one used by the OPFOR in the field during training are 12 MT-LB multi-purpose tracked vehicles. A few BTR-60s were used during training when the NTC first opened, but they have now become static training aids.

The OPFOR makes use of regular and reserve U.S. Army and U.S.M.C. personnel to augment regular OPFOR forces. This photo shows a group of infantrymen from C Co. 1st Battalion, 314 Infantry, USAR 157th Brigade (Mech) with MILES detectors on helmets and wearing MILES detector harnesses. The M16 rifles have MILES transmitters on barrels.

OPFOR Infantry moves forward in an early morning movement to contact engagement.

Members of an OPFOR anti-tank team in a defensive position await the approach of Blue Force armor. The MILES equipped LAW replicates the RPG-7 and the Dragon is used in place of the RPG-18.

On the battlefield the OPFOR is organized as the 32nd Guards Motorized Rifle Regiment. It usually replicates Soviet Forces opposing NATO defences in Europe. However, during Operation Desert Shield and Desert Storm emphasis switched to simulating Iraqi defences that might be encountered by U.S. forces deployed to the Mideast.



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Both the OPFOR and Blue Force rely heavily on scouts and recon teams for battlefield information. They are inserted into areas where they can observe and report enemy activities up to 48 hours before a battle.

The OPFOR can attack without warning, outnumbering Blue Force units with a 3 to 1 advantage.

An OPFOR attack can involve 160 to 200 vehicles, utilizing Soviet offensive tactics to overwhelm an opponent with mass and momentum.

The OPFOR is highly skilled at using the desert terrain of the NTC to its advantage. Frequenting rocky outcrops and washes with names like Crash Hill, John Wayne Pass, Furlong Ridge, No Name Hill, Porta Potty Wadi, The Valley of Death, The Peanut and The Whale.

T-72 VISMODs rush towards a Blue Force defensive position with a lead vehicle making smoke. Following Soviet battle doctrine, the OPFOR makes extensive use of smoke as well as simulated gas and chemicals on the NTC battlefield. (Michael Green photo)

On the attack the OPFOR will stay in column formation to achieve improved command, control and uniform speed, deploying into battle formations only when they make contact with known Blue Force locations or receive effective direct fire.

The M551 does not have the capability to replicate the Soviet T-72 self-entrenching kit, nor can it support actual mineplows or minerollers.

A M551/T-72 VISMOD at the head of a column of BMP armored personnel carrier VISMODs. Unlike U.S. Army tank companies, a Soviet tank company can be made up of tanks and APCs.

A small number of M551 Sheridans have been modified to represent the Soviet M1974 self-propelled 122mm howitzers.

Detail view of M551/BMP VISMOD turret showing MILES equipment.

OPFOR crewmen on a M551/BMP VISMOD that has been "killed" watch a battle from their vehicle.

Some of the BMP-1 and T-72 VISMODs may soon be replaced by BMP-2s and T-80 VISMODs as the NTC upgrades its VISMODs to reflect a more current OPFOR threat.

A ZSU-23-4 VISMOD moves into an afternoon battle.

Front detail view of ZSU-23-4 VISMOD turret.

The Dragon Anti-Tank Missile Launcher on the side of the M998/BRDM VISMOD allows its crew an anti-tank role similar to a BRDM-1. (Michael Green photo)

At least one MT-LB has been set up to replicate a Soviet SA-13 Gopher Low-Altitude Surface to Air Missile System.

An OPFOR infantry anti-tank team poses in front of 3rd Armored Cavalry Regiment M1A1 Main Battle Tank (MBT) they have put out of action.

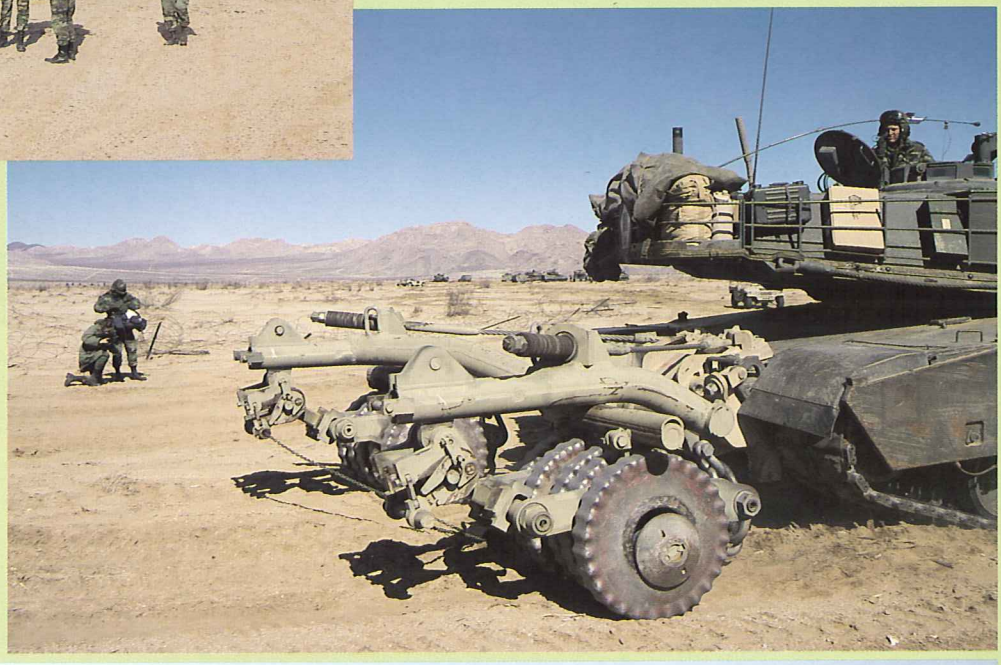
These mock Hind gunships support the OPFOR missions during training cycles, employing Soviet style tactics and maneuvers.

A mixed group of OPFOR vehicles prepares to engage the forward elements of a Blue Force movement to contact.

The crew of a M551/BMP VISMOD keep watch over the "killed" and captured members of a Blue Force reconnaissance team.

A M551/BMP VISMOD moves past a M551/T-72 VISMOD hidden in a defensive position. If dug properly only the commander and antennas will be visible until the tank moves forward to fire.

1st Cavalry Division M3 Bradley cavalry fighting vehicle crews prepare for a road march.



The use of mine clearing equipment such as the roller and plow shown here on M1 MBTs seems to have caught the attention of some tacticians as a result of Operation Desert Storm.

Thermal Imaging Systems (TIS) on the M2/M3 Bradley IFV and M1/M1A1 MBTs give Blue Force units equipped with them an increased ability to target the OPFOR through dust, smoke and darkness.

A M1 MBT moves along the left flank of a column of armored vehicles. A task force leaving the "Dust Bowl" must be fully prepared to engage the OPFOR day or night.

On the NTC battlefield Blue Force commanders are able to put tactical plans in action against a realistic and aggressive opponent.

On the Force on Force battlefield Blue Force units will engage the OPFOR in five basic scenarios: hasty attack, movement to contact, deliberate attack, defend in sector and defend from battle position.

The Blue Force will be evaluated on its strengths and weaknesses under conditions similar to actual combat.

A 4th Infantry Division tank commander searches the desert for the OPFOR. The .50 caliber machine gun on his cupola is fitted with a blank firing device.

The view from an OPFOR position shows dozens of "KILLED" vehicles on both sides of the trench.

A 4th Infantry Division M163 crew takes a break after an early morning battle. OPFOR and Blue Force air defense systems are MILES equipped and capable of "shooting down" MILES equipped aircraft that participate as both OPFOR and BLUE FORCE air assets.

Even with the turret stowed in the travel position, the M981s multiple antennas make it easy to recognize. It can provide fire support, locate and laser range, or designate targets and communicate target information to other fire support elements.

A 3rd Armored Cavalry Regiment M1A1 MBT. Its improved armor, 120 mm main gun, and nuclear, biological, chemical (NBC) protection give it a definite battlefield advantage over the M1.

The M998 HUMMERs have proven to be a fast, handy vehicle, capable of performing a wide range of military tasks.

A 4th Infantry Division Anti-Armor team prepares to fire their TOW launcher from a defensive position. The two steel posts limit their field of fire, and help coordinate their weapon with other anti-tank weapons on the battle field.

With turrets traversed to the rear these "killed" 3rd ARC M1A1 MBTs and their crews will not move until the battle is over.

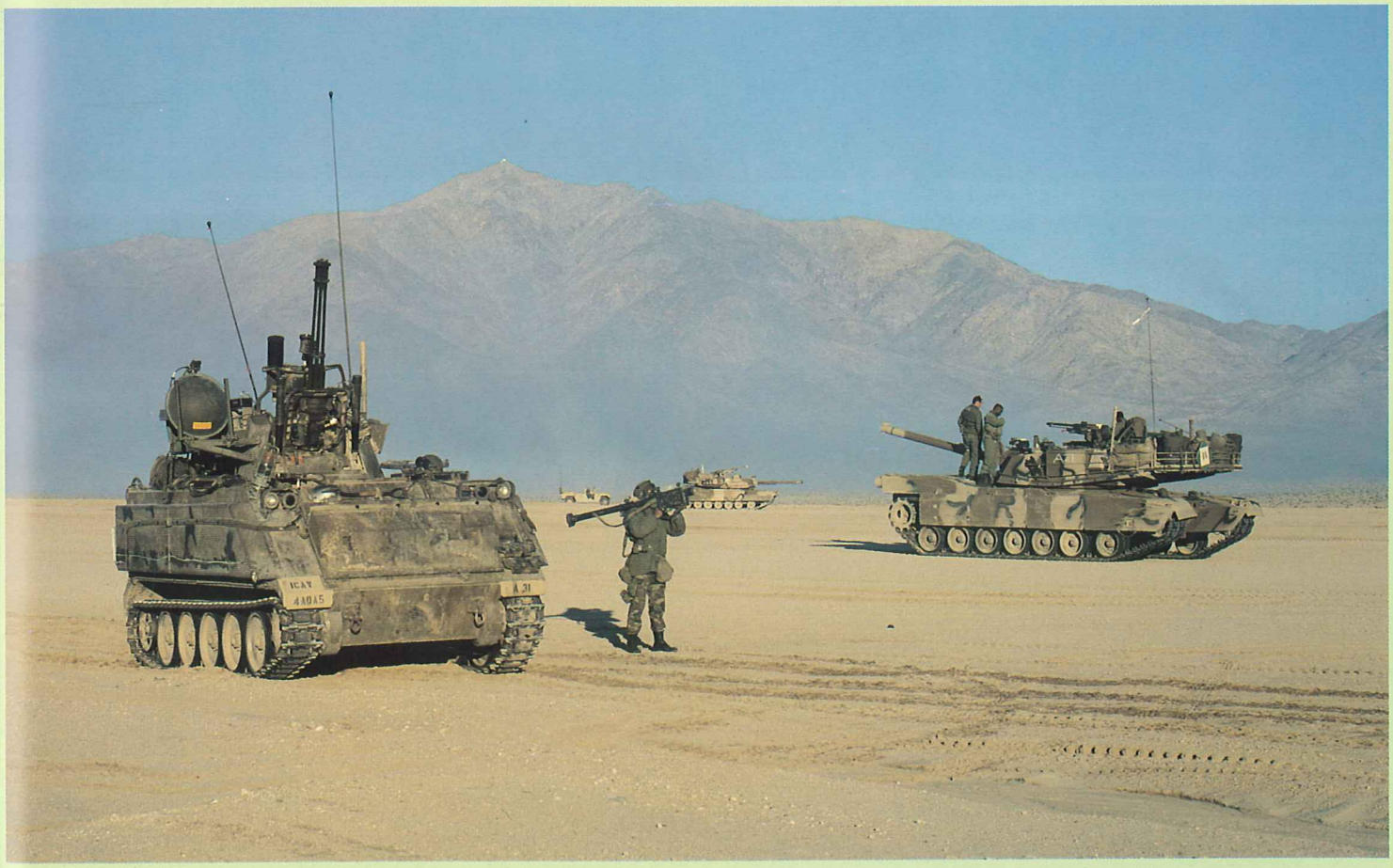
Tired 3rd Armored Cavalry Regiment tankers rest after a rough morning battle. Battles are fought day and night, pushing the endurance of men and equipment to the limit.

1st Cavalry Division tankers check equipment on the turret of their M1 MBT. The lst Cavalry Division was one of the NTC trained divisions to take part in Operation Desert Storm.

A M109 on the move, showing crews gear stowed on outside of turret.

A M1A1 MBT of the 3rd Armored Cavalry Regiment, showing large amount of gear that can be stowed in the bustle rack on rear of turret. The thick antenna on rear of turret transmits data on tank location, condition and firing back to the operations center computers at main post.

A 1st Cavalry Division task force defends against an OPFOR air attack with simulated STINGER missile and M163 20mm fire. The two M1 MBTs have been "killed" by an earlier air strike.

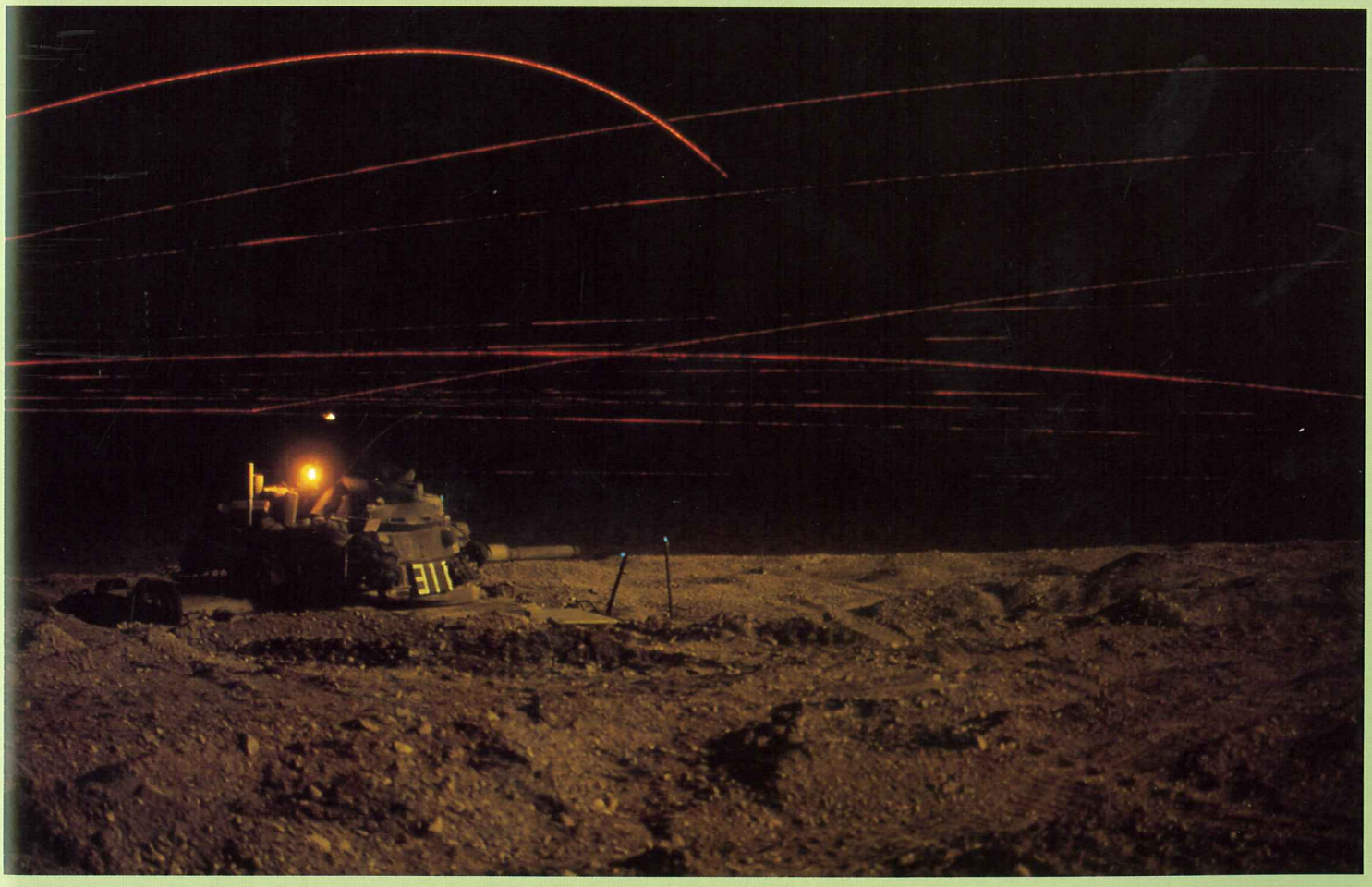


Light infantry also trains at the NTC, relying extensively on the HUMMERS for its mobility.

With OPFOR T-72s and BMPs regrouping in the background this 3rd Armored Cavalry Regiment M1A1 MBT with a thrown track must await the services of a M88.

With battles fought day and night, the setting sun may not signal the end of a battle, just the beginning of another.

A 1st Infantry Division M1 MBT fires its 105mm main gun at night from a defensive position on the live fire area. Live fire exercises allow commanders and troops to coordinate the firepower of direct fire, artillery, anti-tank missiles and air support on a realistic battlefield.



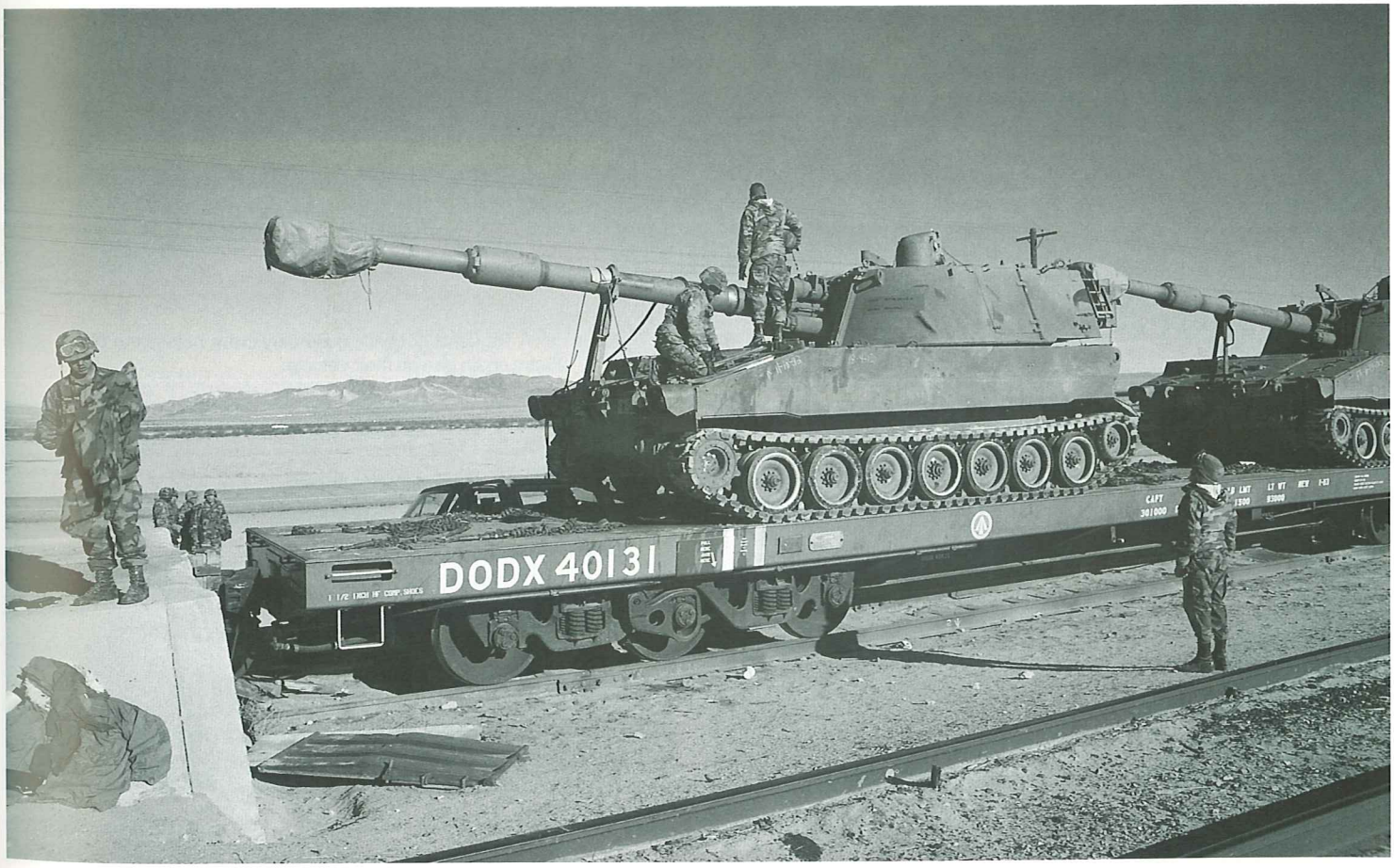
Tracers light up the night sky in front of a 4th Infantry Division M60A3 MBT. The light on the turret indicates that this tank has been "killed".

Army aviation participates fully as a member of the combined arms team at the NTC. An attack helicopter battalion (Apache or Cobra gunship) and a slice of Command Aviation Company (General Support) augment most rotations.

7th Infantry Division (Light) HUMMERs tow M119 105mm howitzers into a new firing position north of Red Pass.

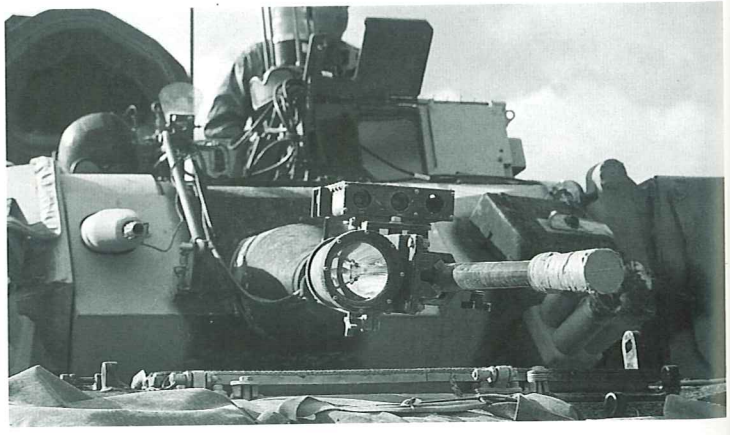
A M1A1 being refuelled by a HEMTT.

The unloading of a brigade sized task force takes about two days and is overseen by the officers and men of the NTC's Movement Control Center.



Once at the NTC the task force referred to as the Blue Force or BLUFOR must check vehicles and equipment and prepare them for battle.

A 1st Cavalry Division Bradley crew installs the barrel of the 25mm chain gun on their vehicle.

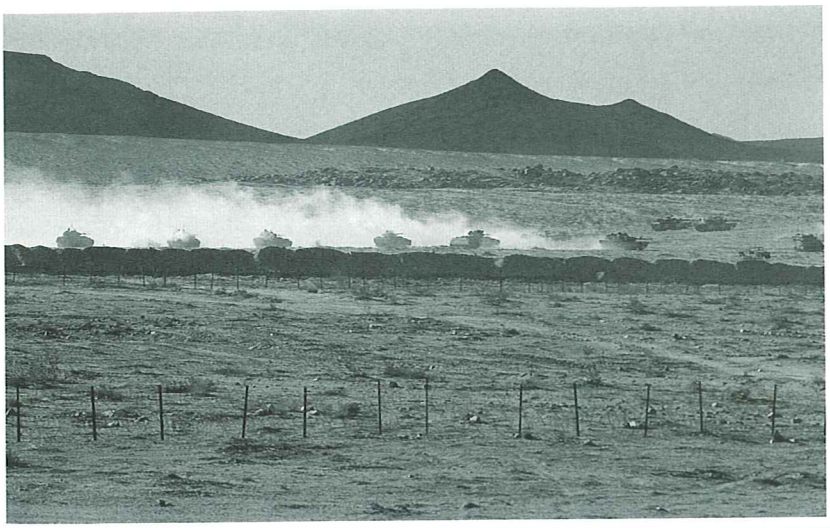


Because of the high rate of fire of the Bradley's 25mm chain gun, a strobelight is used to simulate muzzle flash, rather than the Hoffman charges used on larger caliber guns.

A 2nd Armored Division Bradley crewman awaits orders at a marshaling area called the "DUST BOWL".

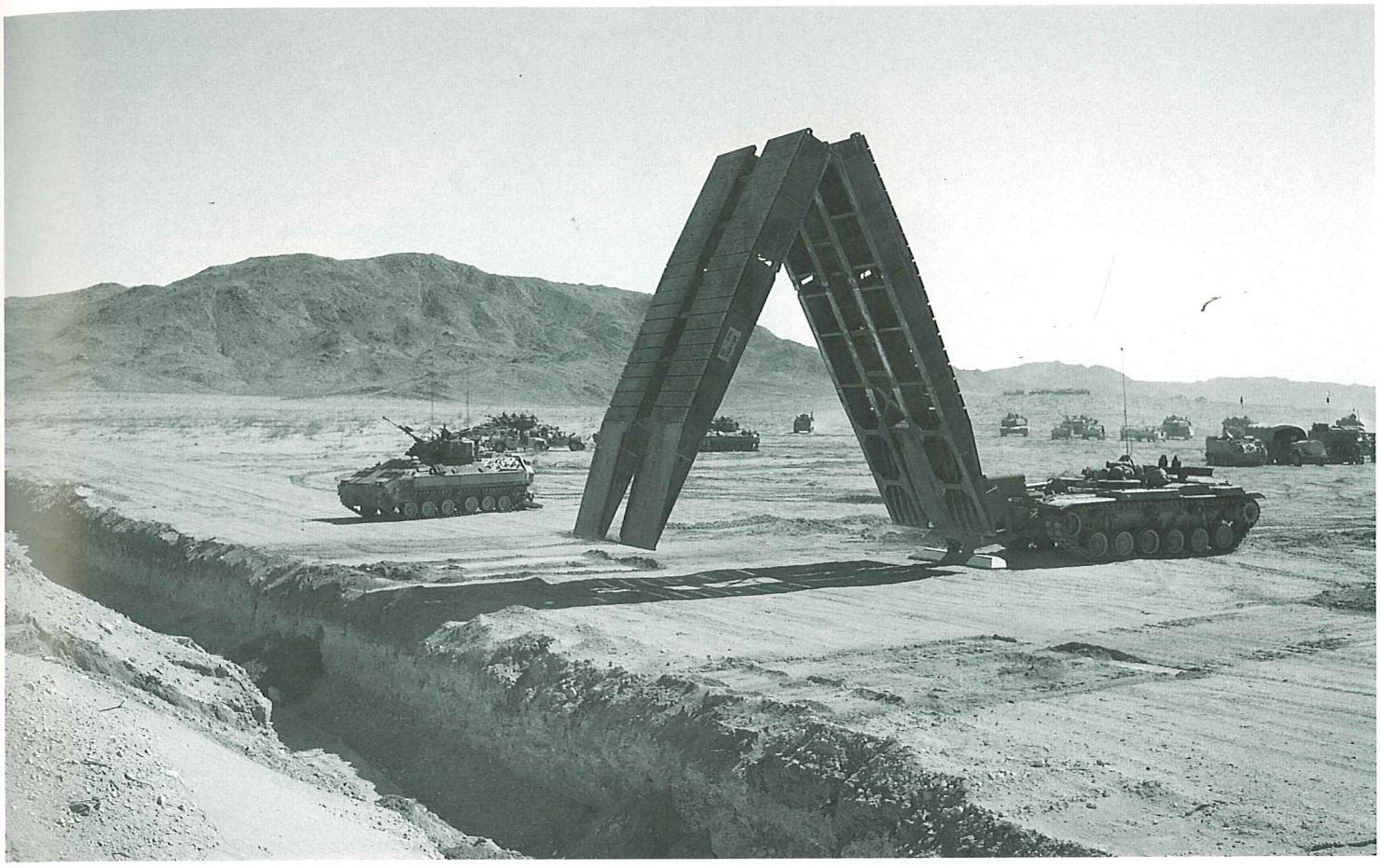
MILES equipment must be installed and calibrated. In this photo of an M1A1 MBT turret, the MILES detector strip, Hoffman charges, a "Kill" indicator light are clearly visible.

The increased speed, maneuverability and firepower of the M1s and Bardleys, coupled with their Thermal Imaging Systems has meant higher casualties for the OPFOR on the battlefield.

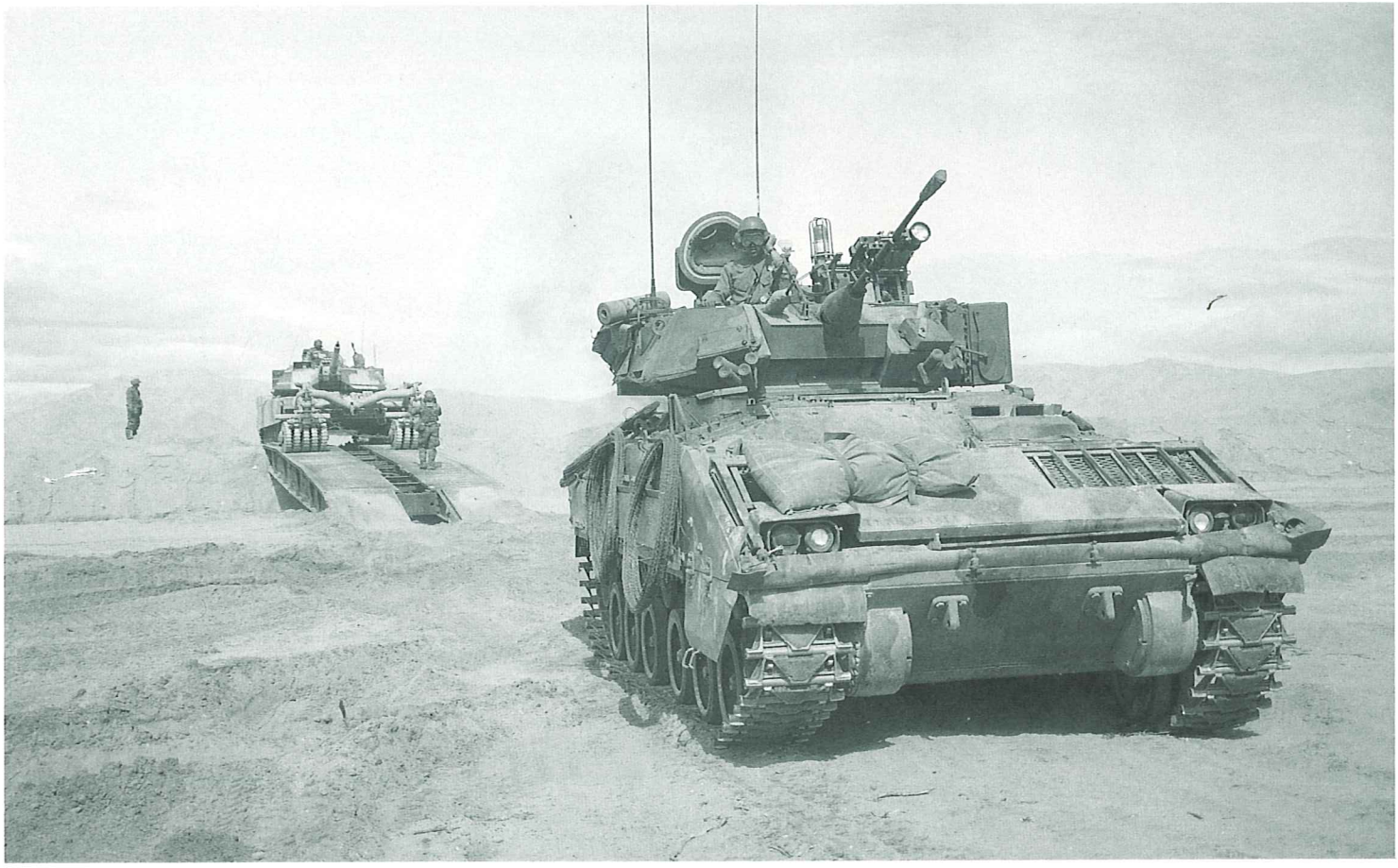


A major part of these brigades' training was directed towards defeating heavily fortified defensive positions that they might encounter in Iraq or Kuwait.

In early 1991 two U.S. Army National Guard Brigades trained at the NTC to prepare them for possible deployment to the Mid-East during Operation Desert Storm.



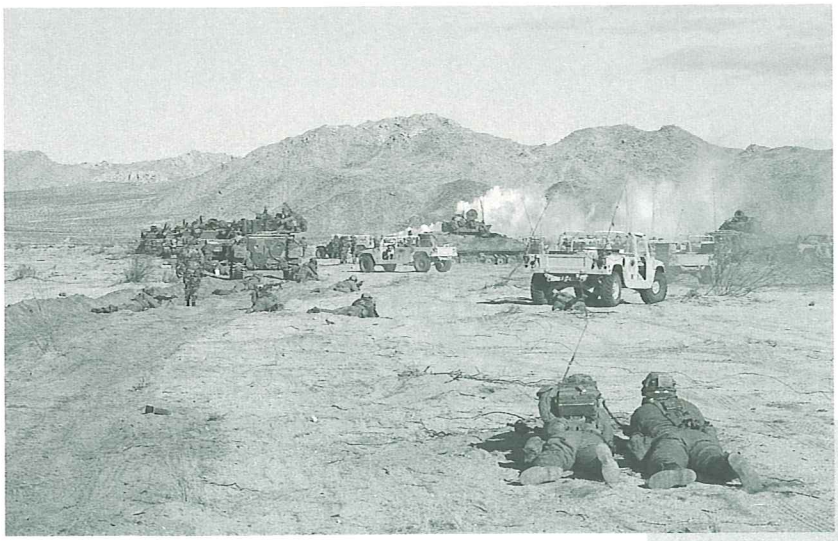
Attacking 155th Armored Brigade elements that survived artillery and air strikes must breech a massive anti-tank trench with Armored Vehicle Launched Bridges (AVLB) while under fire from OPFOR defensive positions.



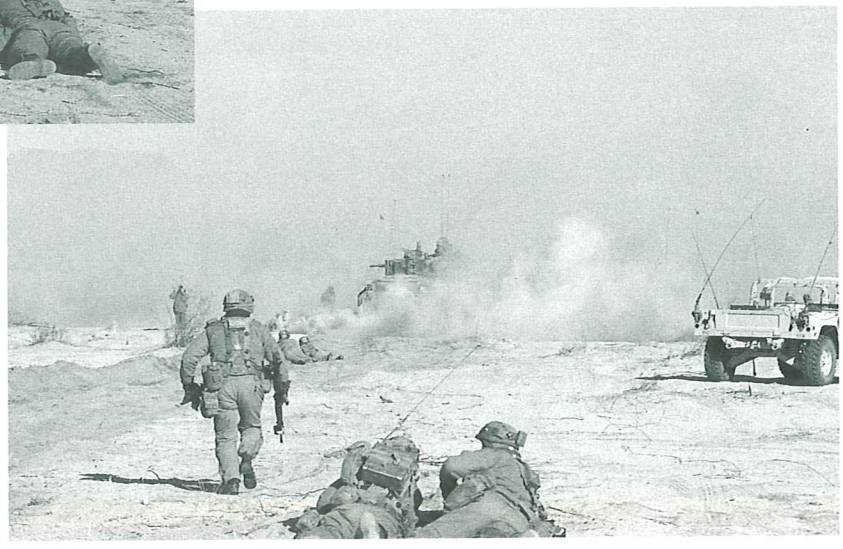
Once across the trench mine roller and plow equipped MBTs and engineers must be utilized to clear a path through mines, barbwire and other obstacles.

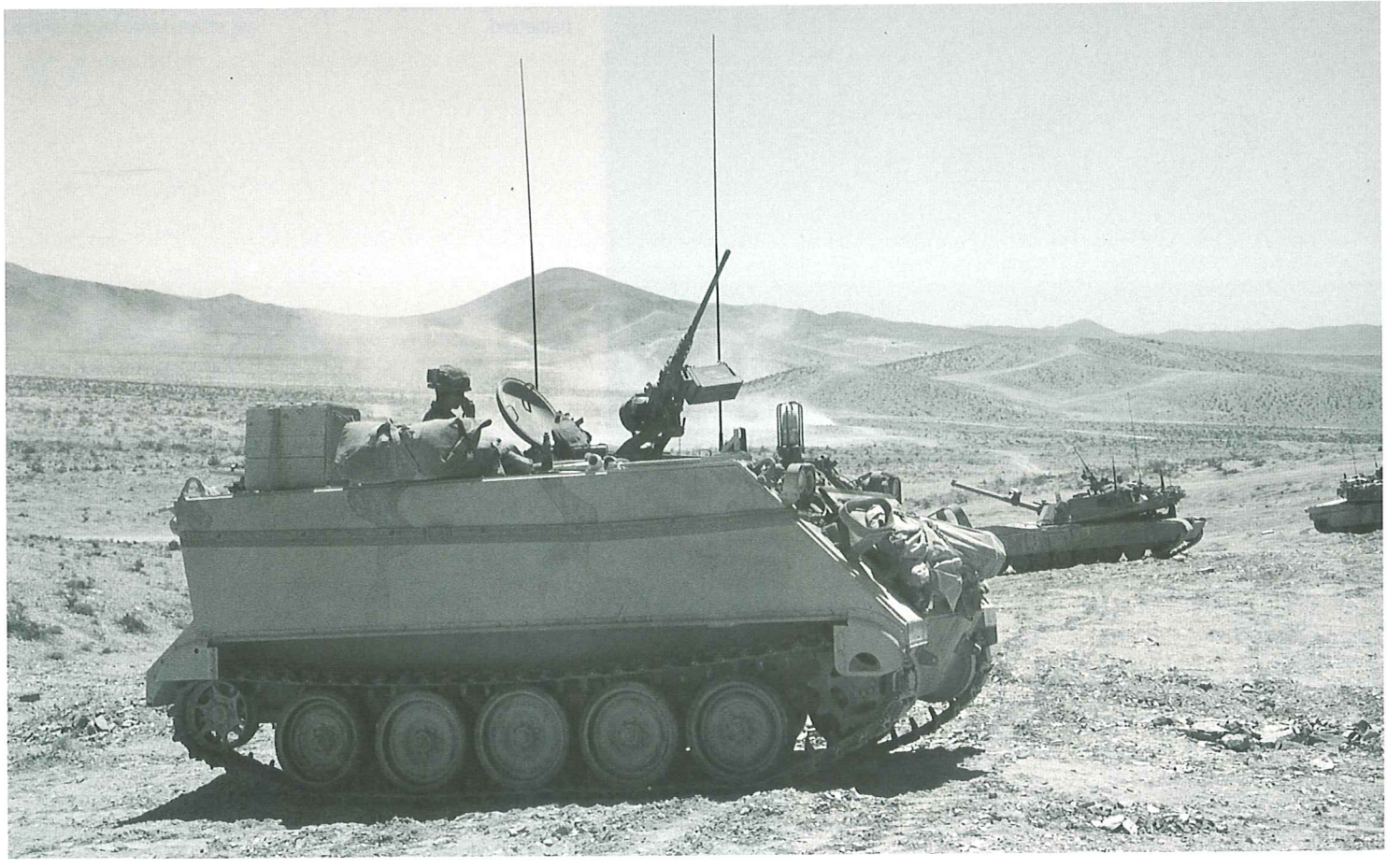
Unable to penetrate the mines and barbwire, an ever increasing number of vehicles killed by OPFOR fire and mines litters the battlefield.

With more vehicles pouring across the anti-tank trench it becomes increasingly difficult in the smoke and dust to maneuver around the vast number of "KILLED" vehicles and equipment.



As the attack loses momentum and the dust and smoke clears it becomes apparent that once again the OPFOR has prevailed at the NTC.





The M113 family of vehicles (almost 80,000 have been produced) can be found everywhere at the NTC in every version used by the U.S. Army today. (Michael Green photo)

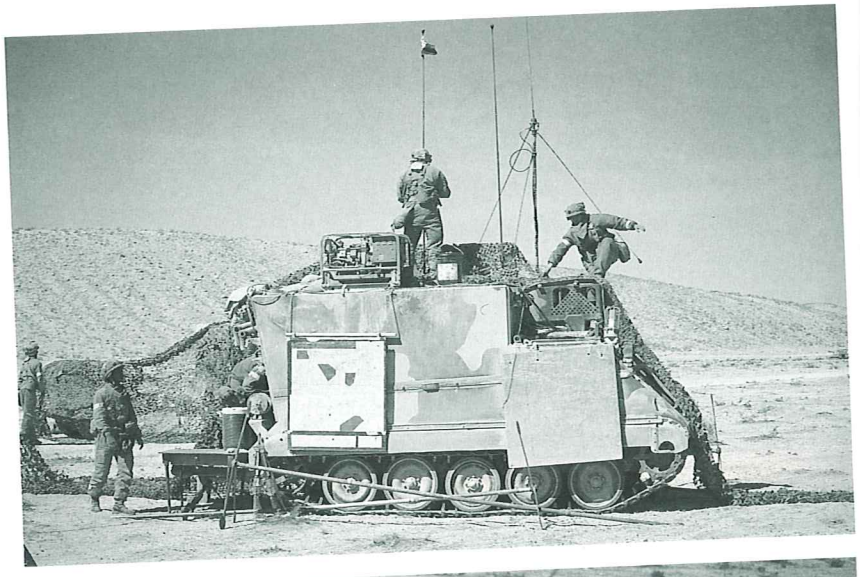
M106 mortar carrier vehicle armed with a 4.2 inch (107mm) M30 mortar mounted on a turntable in the rear of the hull. It fires to the rear through an opening in the roof covered by a three-piece hatch.

The mortar tube of the M106 can be fired from outside the vehicle using the base plate visible on the left side of this 3rd Armored Cavalry Regiment vehicle.

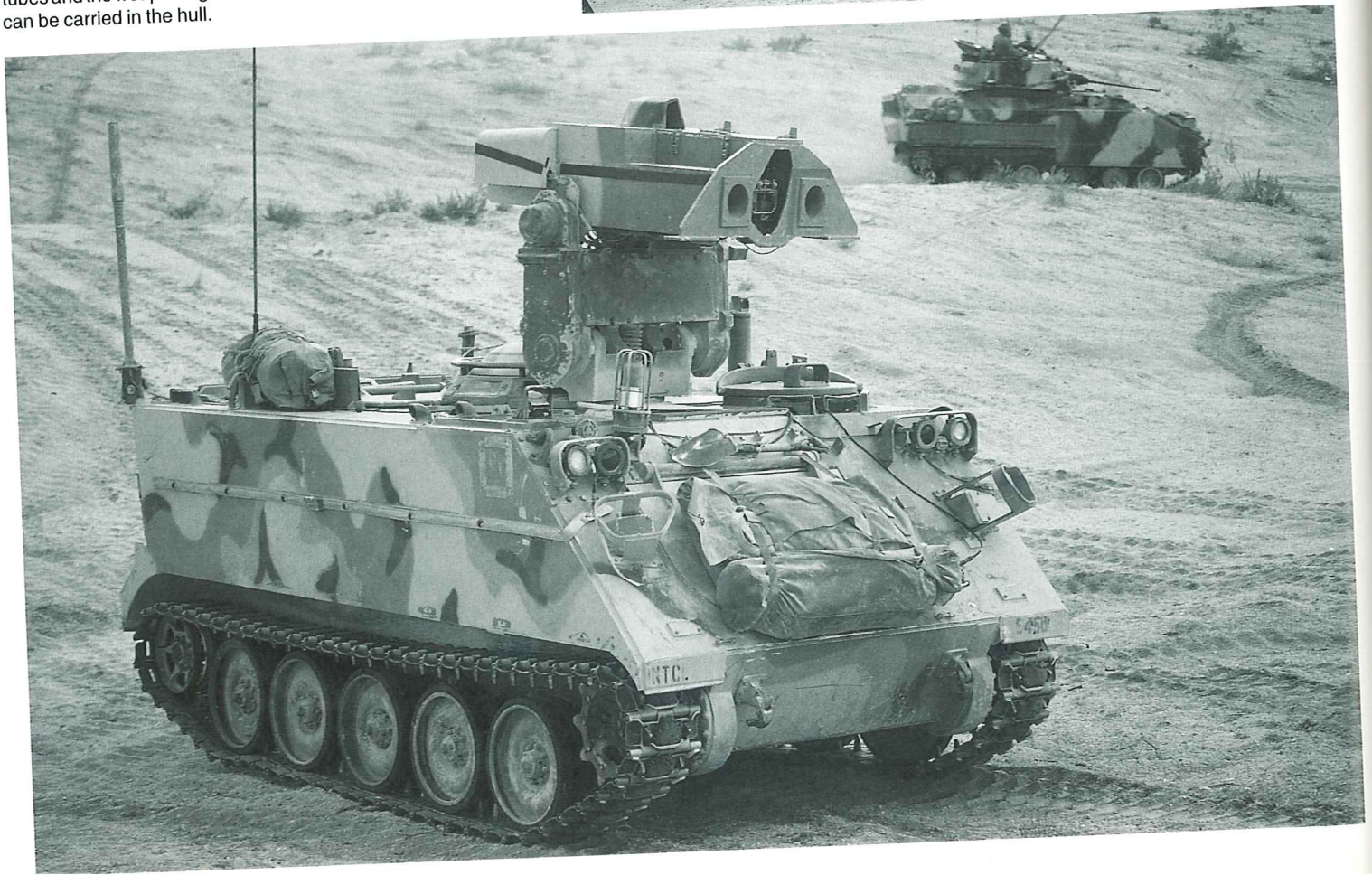
155th Armored Brigade engineers stand next to their M113 towing an M58 Mine Clearing Line Charge (MICLIC) system capable of clearing a 100 x 8 meter path through a mine field.

M577 Command Post vehicle. A generator is mounted externally at the front of the vehicle to provide power for the additional radios carried onboard this vehicle.

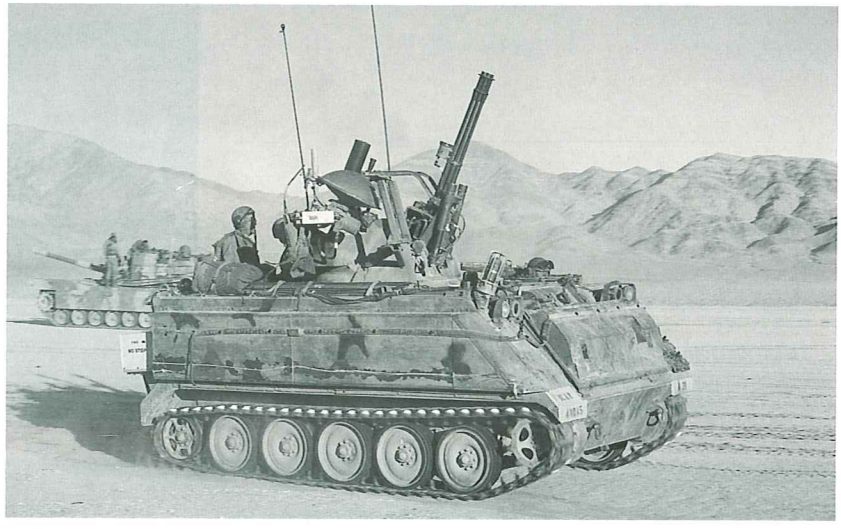
A 1st Infantry Division M577 in use as an artillery Fire Direction Center (FDC) vehicle. The FDC is responsible for receiving and directing fire missions for the battery.



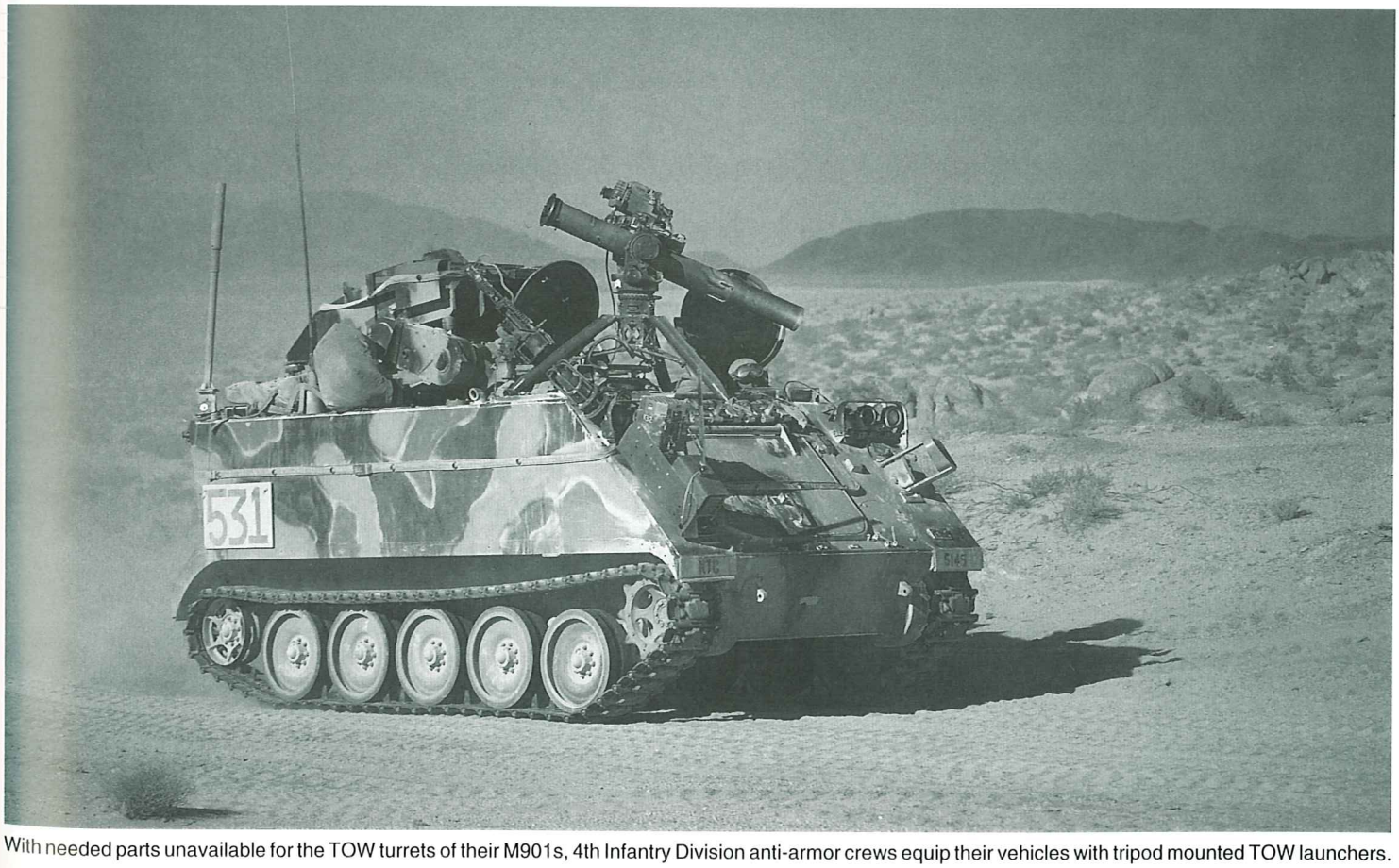
M901 Improved TOW vehicle is essentially an M113 fitted with an Emerson Company ground TOW launching system. The launcher assembly (pictured in a raised position) contains two TOW launch tubes and the weapon sights for firing. Ten additional TOW missiles can be carried in the hull.



The M981 fire-support team (FIST) vehicle looks similar to the M901 but the turret contains Laser designators and range finders instead of TOW launchers.



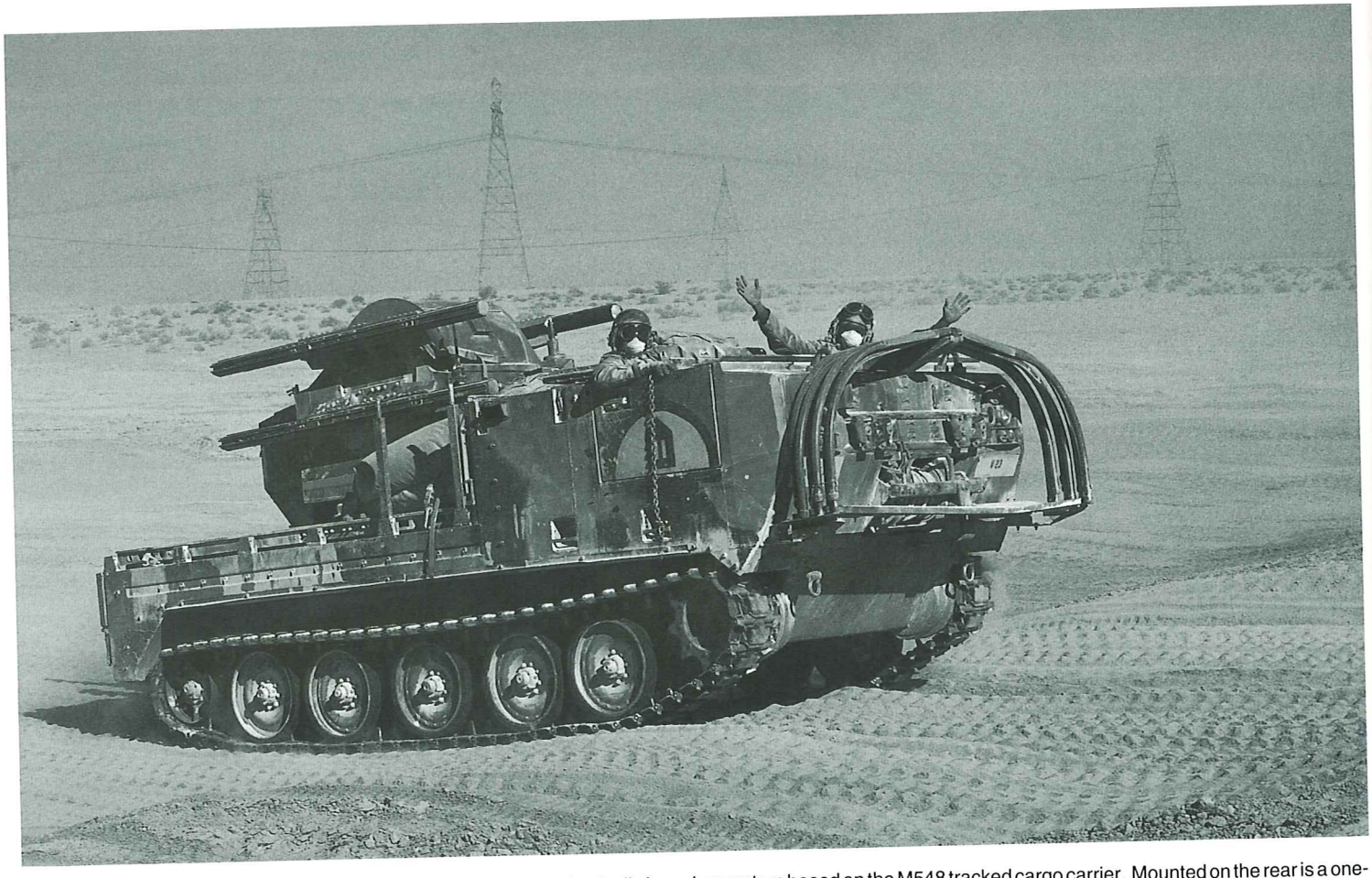
M163 Vulcan self-propelled anti-aircraft vehicle which is basically an M113 chassis fitted with a one-man electrically-driven turret armed with a 20mm M168 Vulcan gun. A gyro lead-computing sight and a range-only radar are mounted on the right side of the turret.



With needed parts unavailable for the TOW turrets of their M901s, 4th Infantry Division anti-armor crews equip their vehicles with tripod mounted TOW launchers.

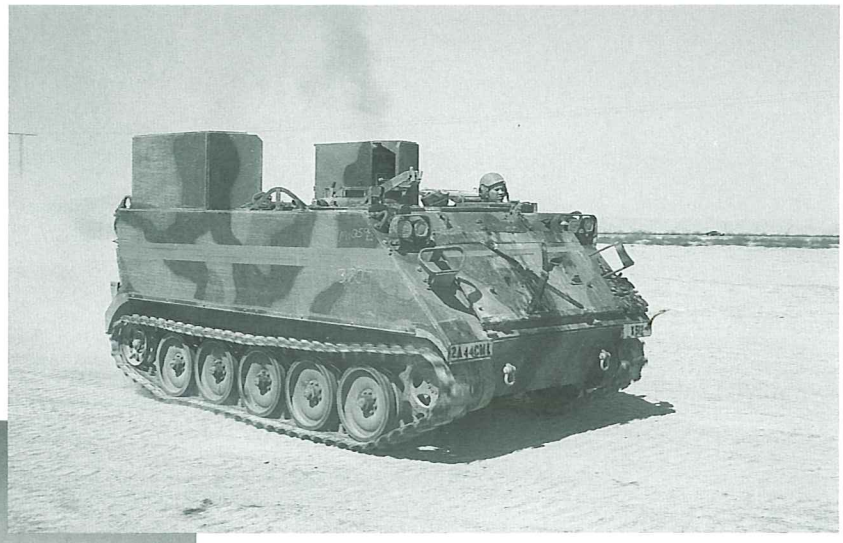
A M167A1, the towed version of the M163 Vulcan system, guards a remote airfield. Its 20mm cannon is capable of firing 1000 or 3000 rounds per minute and is effective against both air and ground targets.

A M163 Vulcan crew dismounts from their vehicle after being "KILLED" along with the Blue Force vehicles in the background by a massive OPFOR attack.

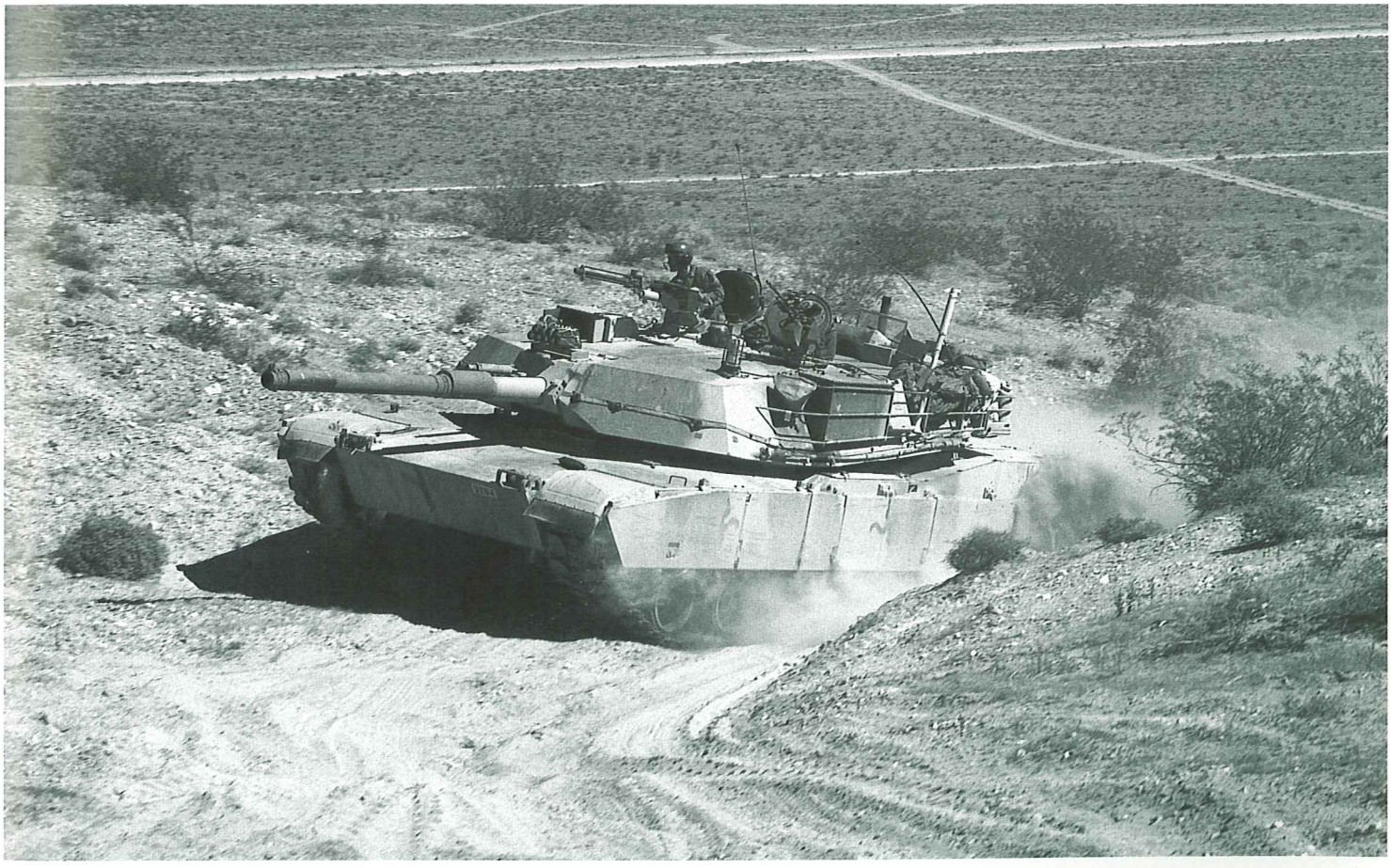


M730 series Chaparral low altitude self-propelled surface-to-air missile launcher system based on the M548 tracked cargo carrier. Mounted on the rear is a one-man, power-operated turret which can mount four Chaparral missiles with an additional eight missiles stored in reserve.

This 2nd Armored Division M1059 smoke generating system vehicle is another variant of the M113. It is a M113A2 with two M54 smoke generators mounted on the top-rear of the vehicle.

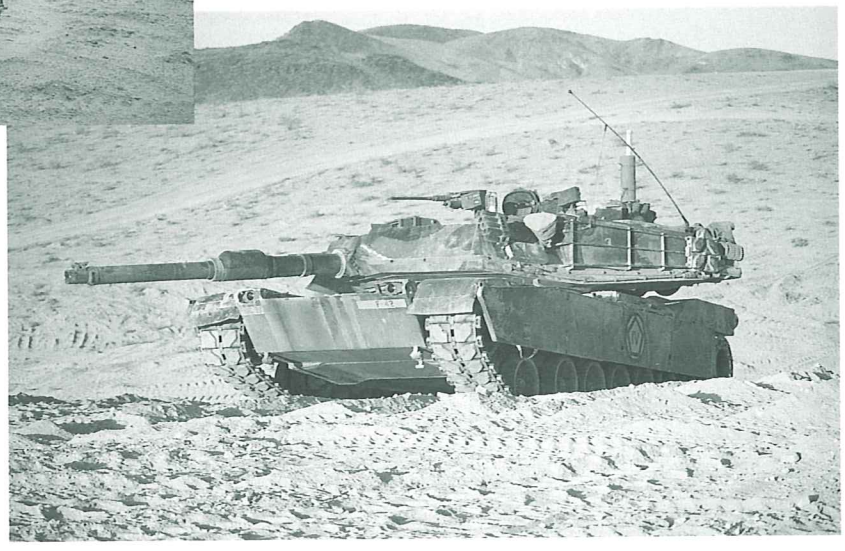


A 2nd Armored Division Bradley M3 cavalry fighting vehicle crew prepares a defensive position for their vehicle.

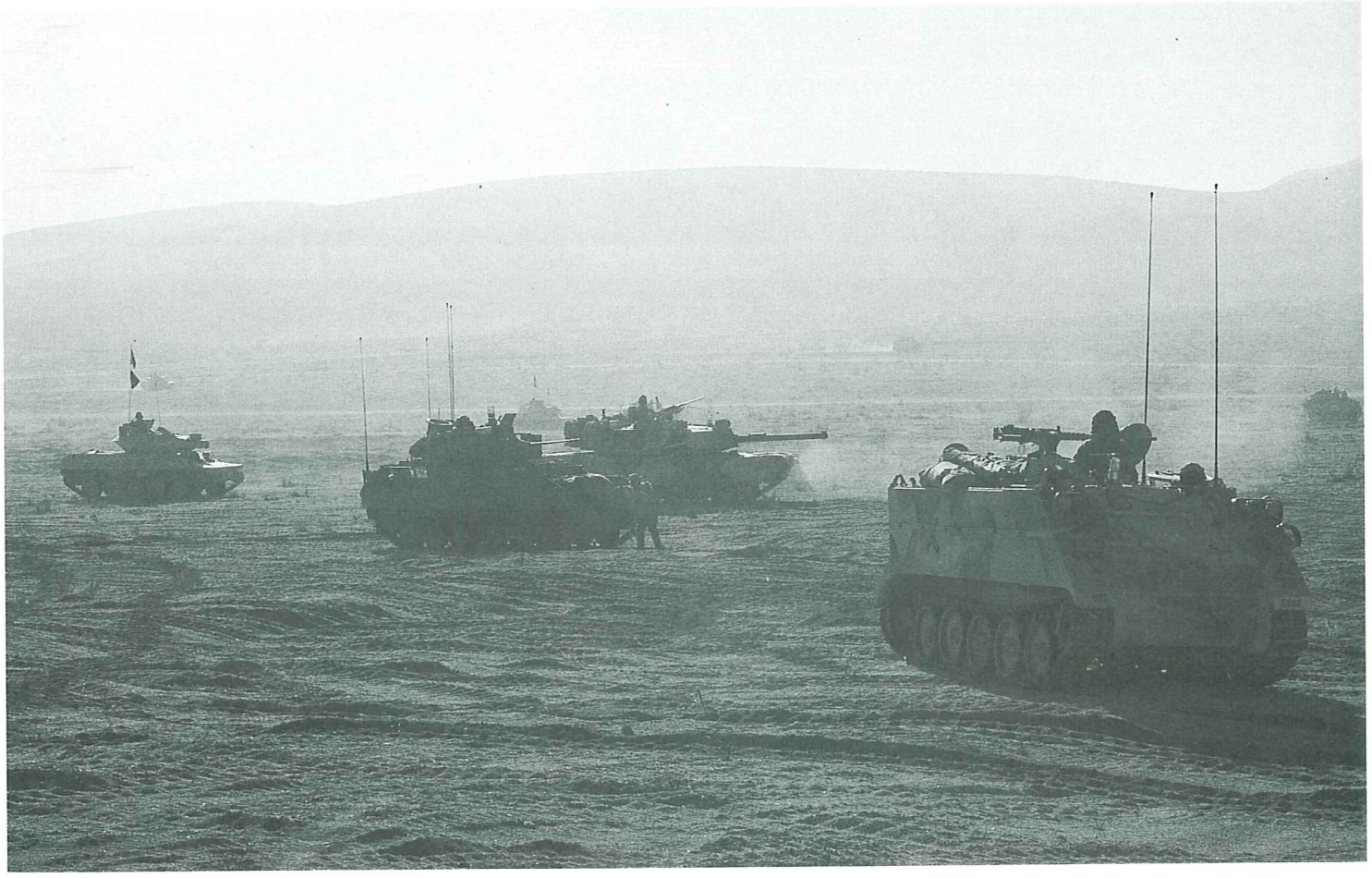


A 1st Cavalry Division M1 MBT moves up a hill in response to an OPFOR attack.

As M1 MBTs in the background fire on advancing OPFOR armor, a Bradley prepares to fire a TOW missile.

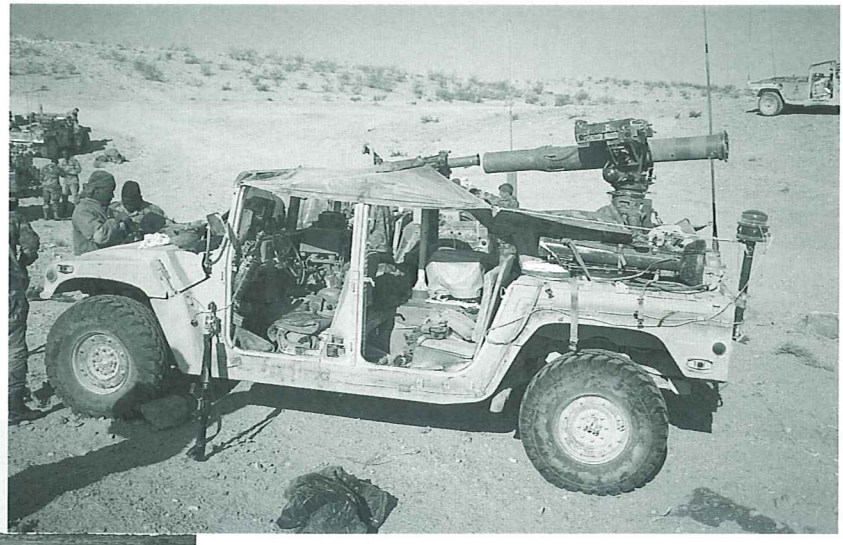


A 3rd Armored Cavalry Regiment M1A1 MBT takes advantage of the back side of a hill while awaiting an OPFOR attack.



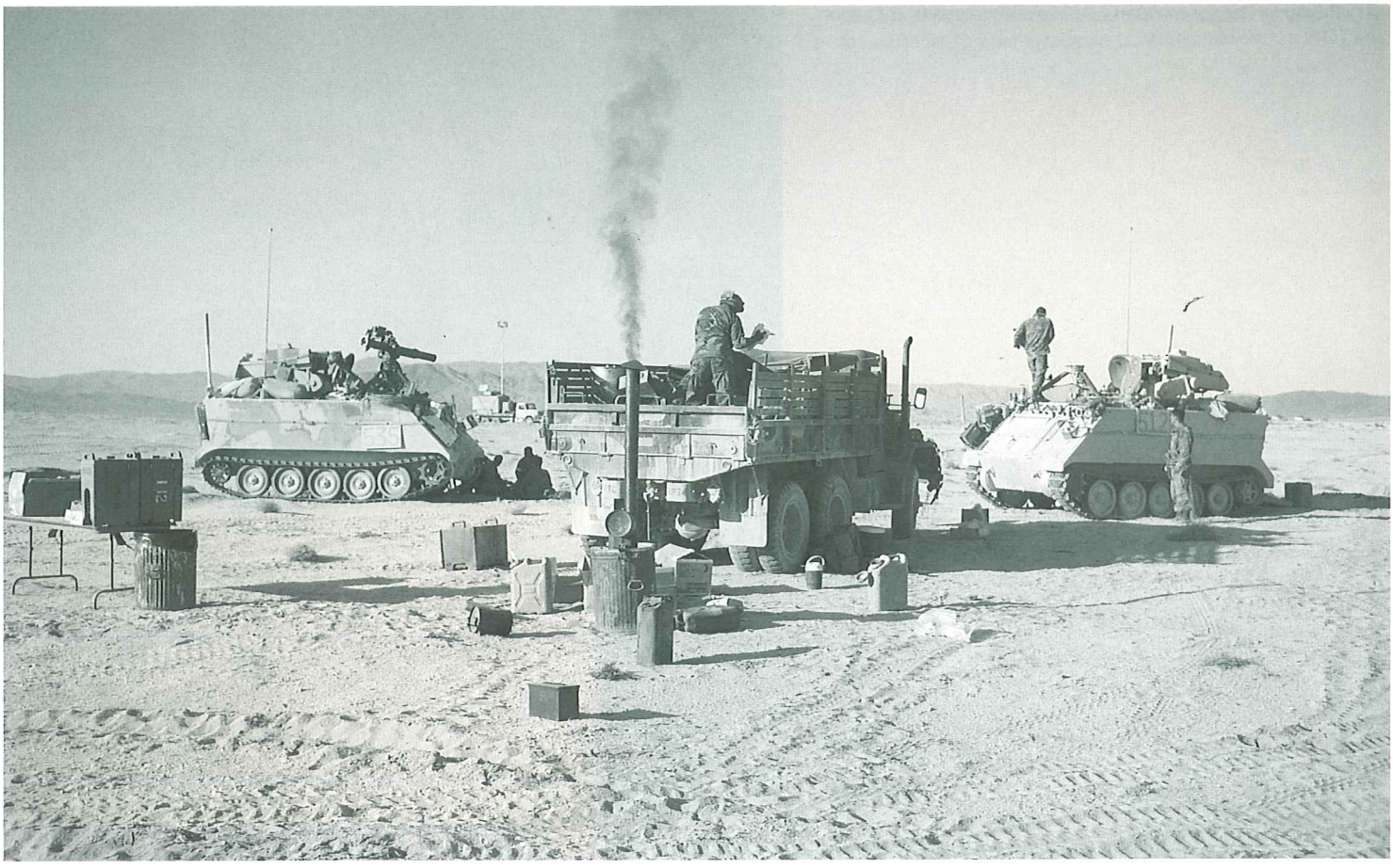
M1 MBT and M113 move past a disabled Bradley M3 CFV. The added antennas on the Bradley indicate it is being used as a command vehicle.

4th Infantry Division M998 HUMMERs are equipped with Dragon and TOW missile launchers.



A "SCORPION" O/C moves along with a 4th Infantry Division anti-armor company equipped with M901s and M113s as they move into defensive positions near HILL 720.

Observer/Controllers (OCs), the coaches and teachers of the NTC, check on a 4th Infantry Division 50 Cal. machine gun position.



Support personnel in a 5 ton truck make preparations for serving hot meals to 4th infantry Division soldiers.

After a hard fought battle a 4th Infantry Division tanker takes time for a shave on his M60A3 MBT.

4th Infantry Division tankers eat a hot meal on their mine plow equipped M1 MBT.

A 3rd Armored Cavalry Regiment tank platoon gathers for an After Action Review (AAR) during which an Observer/Controller will discuss their performance in the last battle.

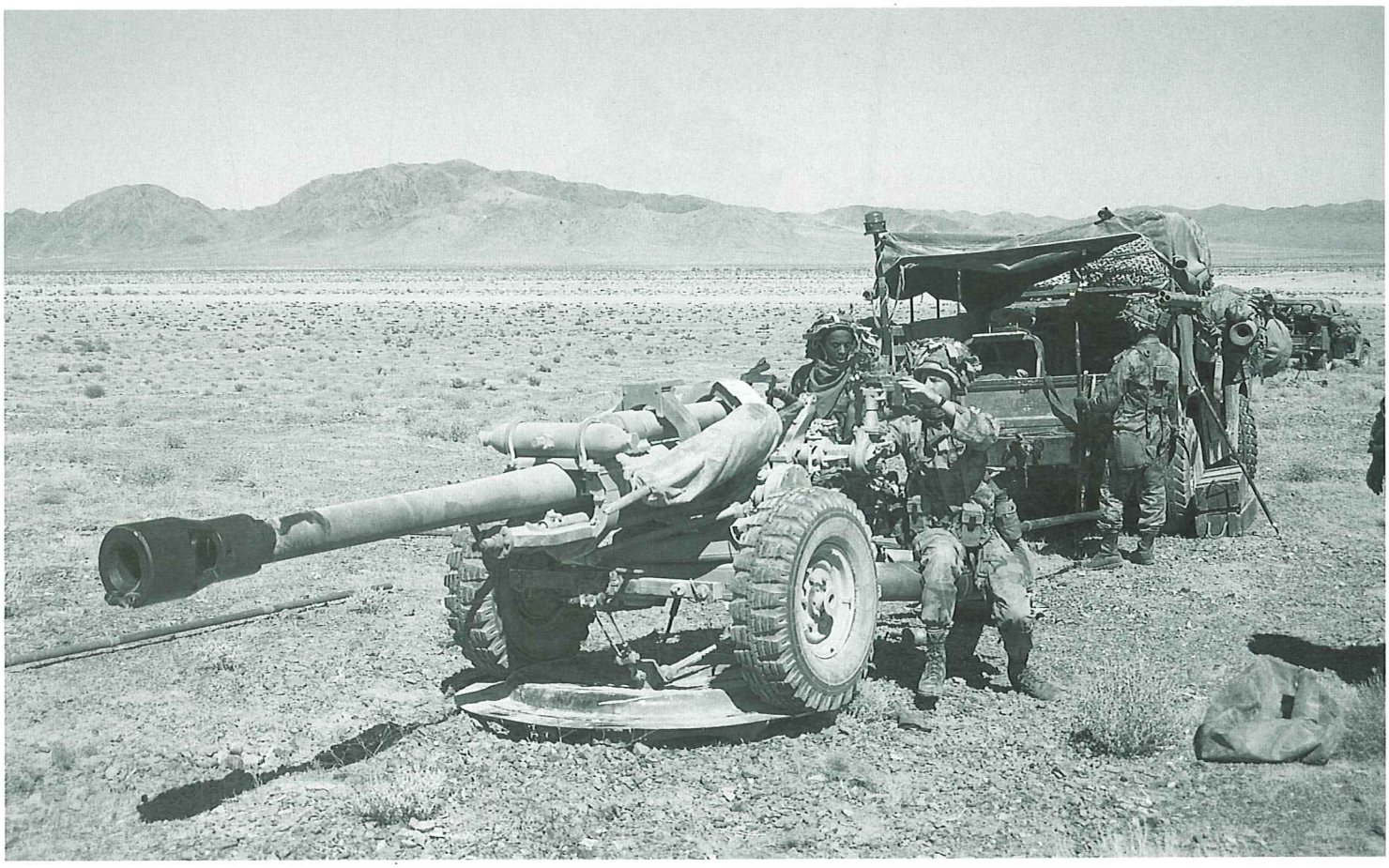
After a battle, 3rd Armored Cavalry Regiment tankers check the air filters on their M1A1 MBT. The almost empty tank of Hoffman charges indicate this tank recently fired its main gun eight times.

Infantrymen awake in, on and around their M113 for a breakfast of cold Meals Ready to Eat (MRE). To survive the days and nights of battle, commanders must make adequate sleep plans and rely heavily on subordinates.

Simulated casualties must be cared for, evacuated, and replaced.

Blue Force tactical radio communications are monitored, jammed and deceived by the OPFOR's Combat Electronic Warfare Intelligence Company (CEWI).

7th Infantry Division (Light) HUMMERs' mounted weapons systems include the TOW, 50 cal. machine gun and 40mm grenade launcher.



The firing position must be located, surveyed, gun laid in and calibrated before the beginning of a fire mission.

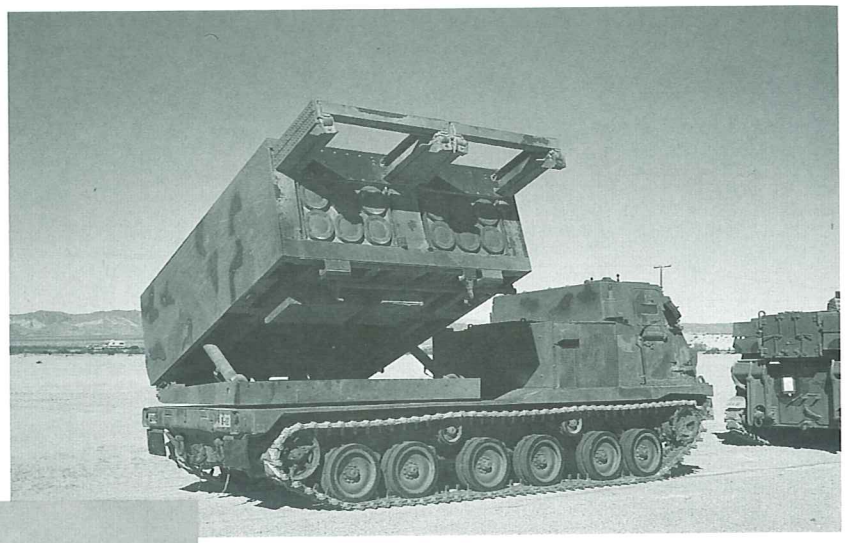
On a hot day 7th Infantry Division (Light) artillerymen seek shade in the back of their HUMMER.

At a 7th Infantry Division (Light) Tactical Operation Center (TOC) plans are made for the next engagement.

A Cobra Attack Helicopter lands for a quick refuelling before returning to a 7th Infantry Division (Light) attack on OPFOR positions.

A M109 155mm self-propelled Howitzer moves to a new firing position. Once in place it can fire three rounds in the first minute and one round a minute after that.

The multiple launch rocket system (MLRS) is a free flight, area suppression artillery rocket system, designed to supplement cannon artillery fire.



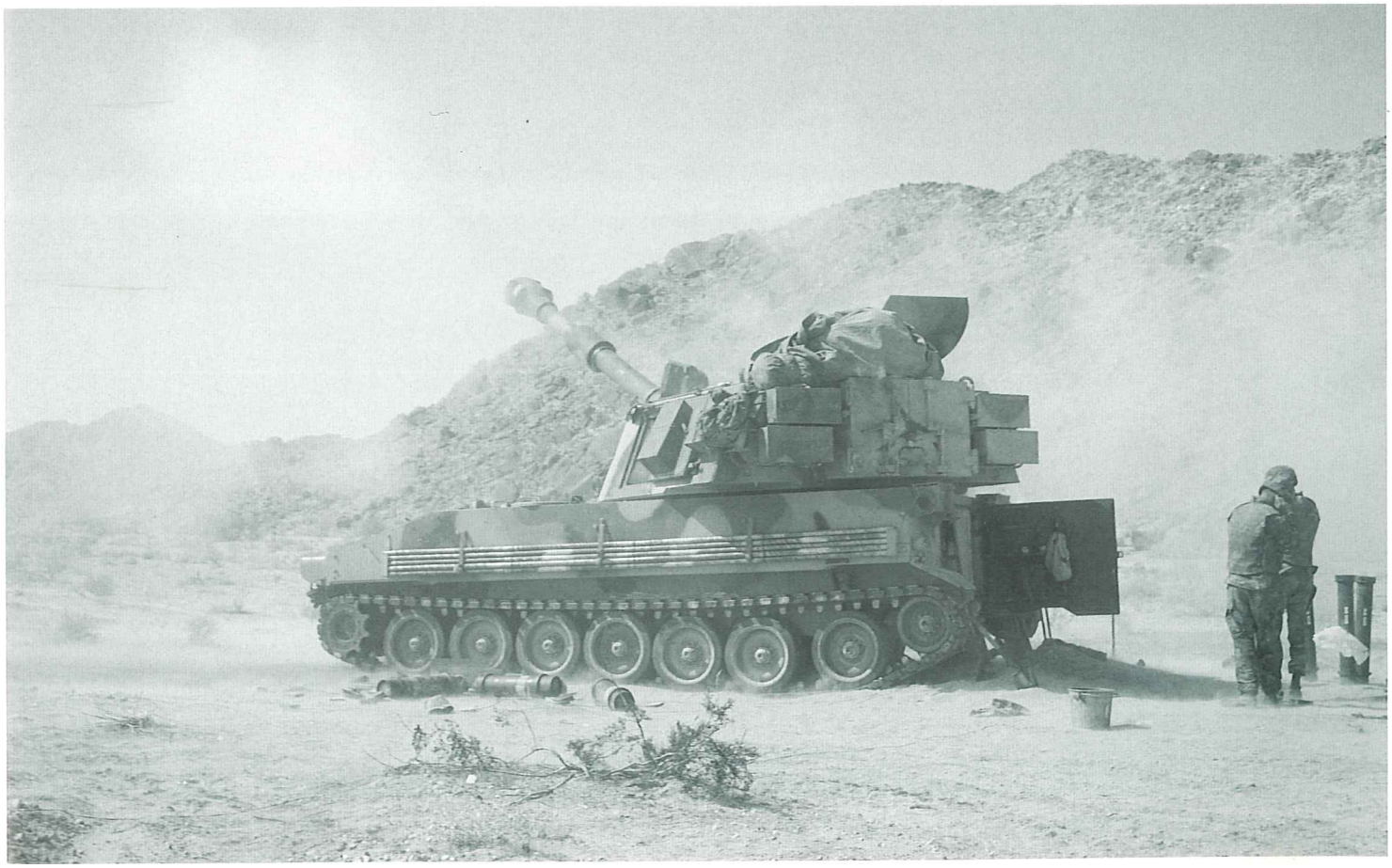
Replacing the M548 in some units is the M992 field artillery ammunition support vehicle (FAASV). It has the same chassis as the M109 with a fully enclosed superstructure and is able to transport 90 rounds of 155mm projectiles and powder.

The M548 tracked cargo vehicle supplies the M109 with projectiles and powder.

A M109 battery concealed by camouflage netting fire in support of 1st Cavalry Division attack on the live fire area.

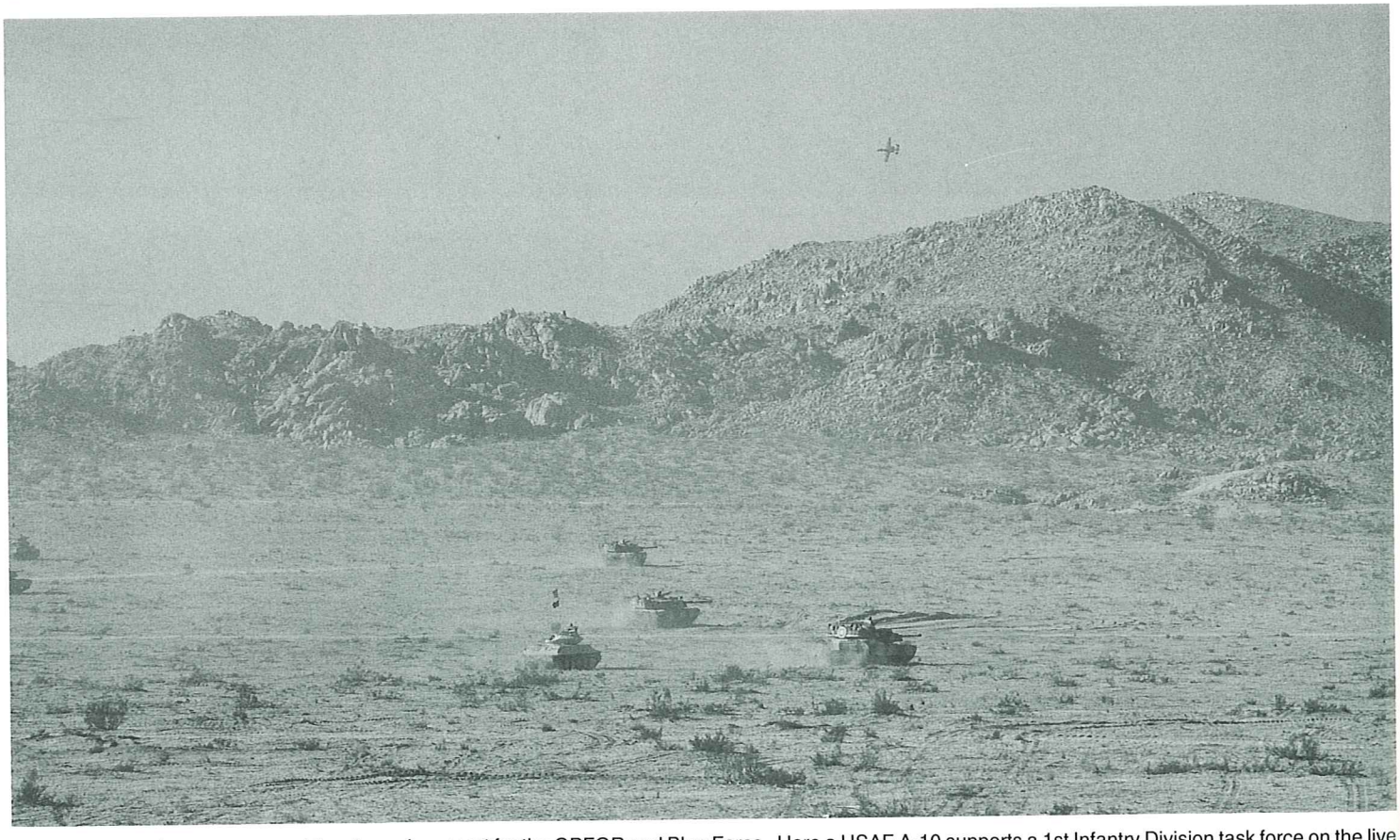
Live 155mm artillery rounds impact in front of 1st Infantry Division M1 MBTs advancing on the live fire range.

The M109 can fire a wide range of 155mm projectiles, including high explosive (HE) illumination, chemical, nuclear, scatterable mines and the copperhead laser guided anti-tank projectile.



To be successful at the NTC Blue Force commanders must be capable of making rapid battlefield assessments regarding the effective deployment of infantry, armor, artillery, air defenses, engineers, aviation and support units.

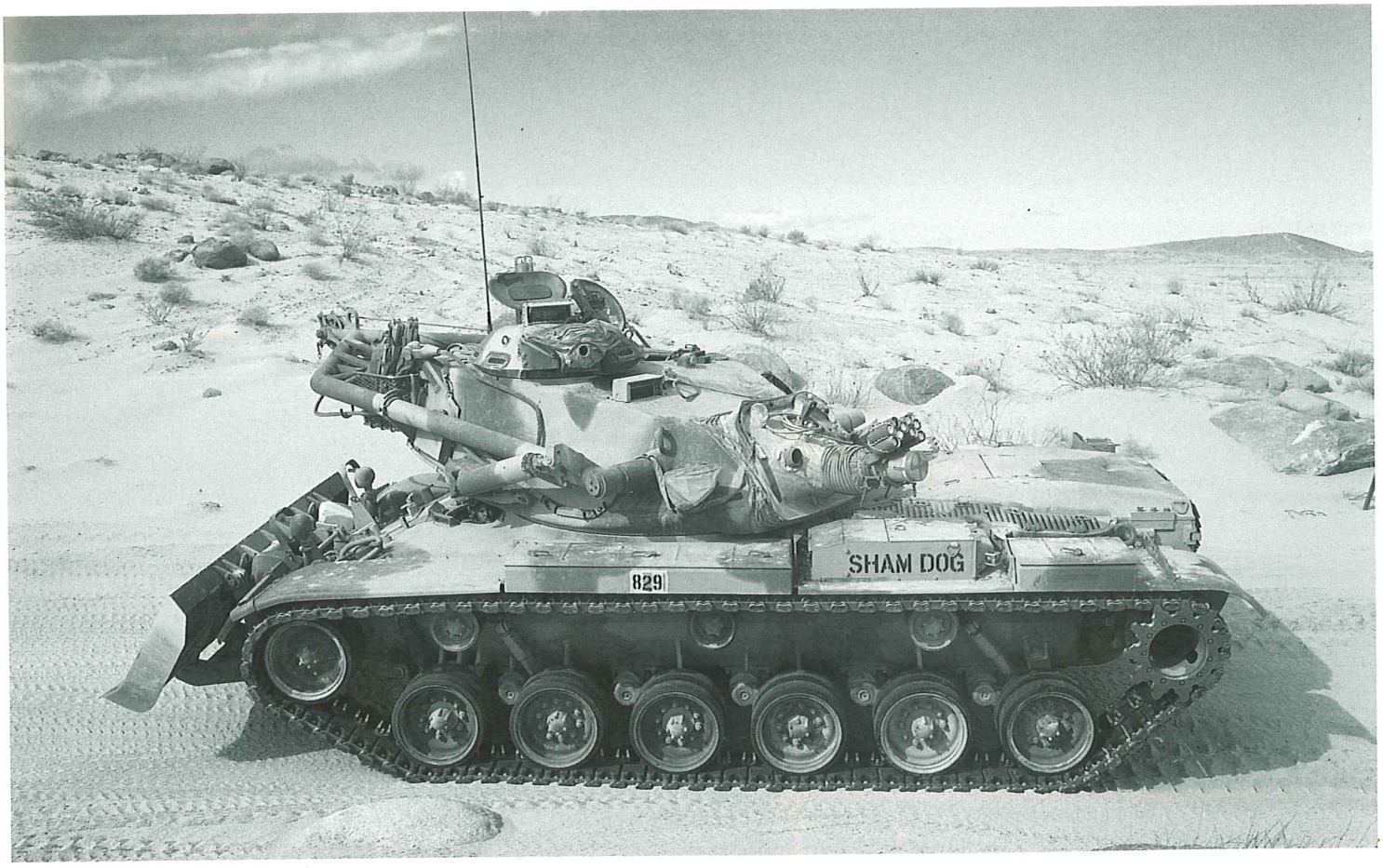
A 3rd Armored Cavalry Regiment M1A1 MBT in defensive firing position on the live fire range. The two stakes on each side of the main gun limit the field of fire to a predetermined area. The center stake assists the driver when moving the tank back to this firing position from out of hiding in the deeper trench behind the tank.



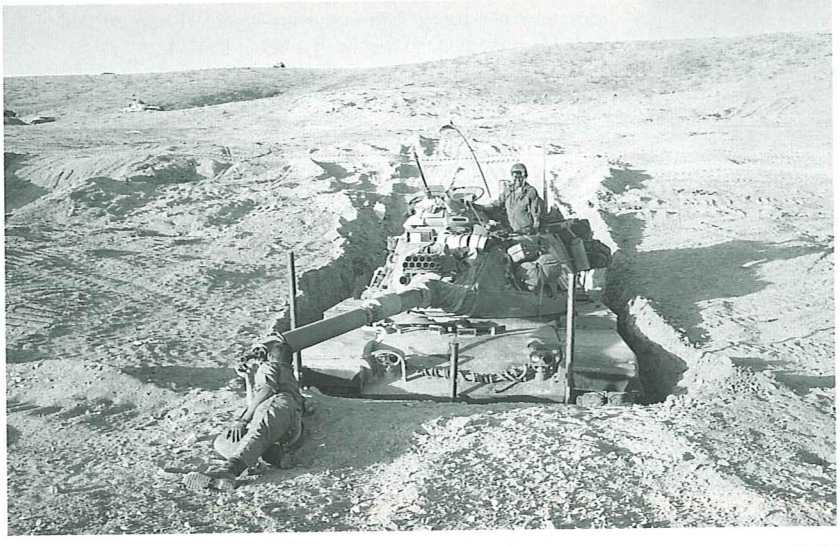
The Air Warrior program provides close air support for the OPFOR and Blue Force. Here a USAF A-10 supports a 1st Infantry Division task force on the live fire area.

A 3rd Armored Cavalry Regiment M1A1 MBT fires at one of the radio controlled targets on the live fire range. The 3rd ACR was the first U.S. based unit to receive the M1A1 MBT.

The excavation of defensive tank positions is but one of many jobs performed by OPFOR and Blue Force engineers. With bulldozers, skiploaders, Combat Engineer Vehicles (CEV) and explosives they blast and bulldoze tank traps, trenches, fortifications and mine fields.

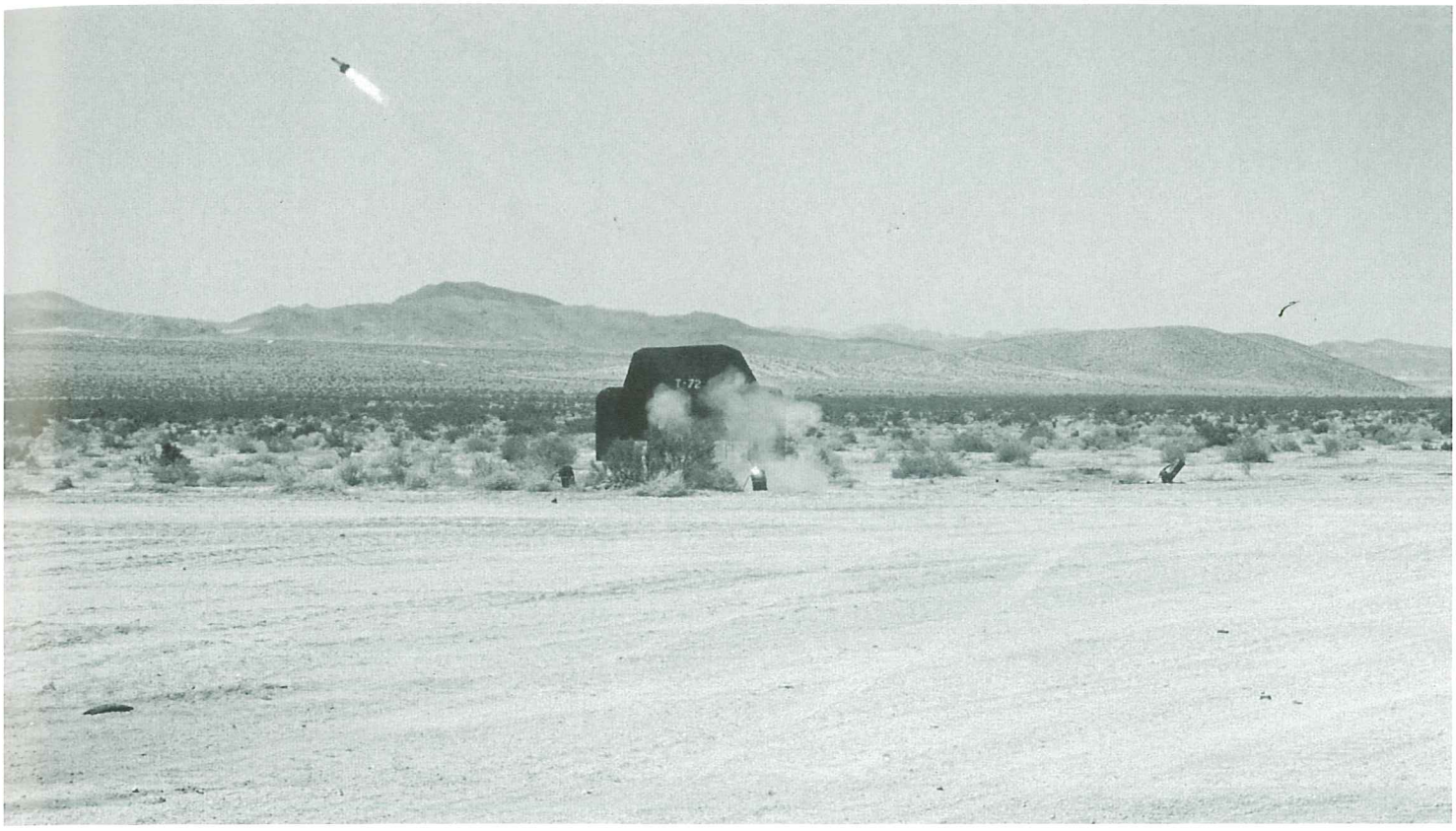


Light infantry engineers use the Small Emplacement Excavator (SEE). Its light weight and small size make it ideal for light forces operations.



A 4th Infantry M60A3 tank crew boresights the 105mm main gun of their MBT at the forward end of a recently dug defensive position.

Installed at the NTC's live-fire area is a computer controlled target system that, using over 1,000 pop-up targets, can simulate a full Soviet motorized rifle regiment in the attacking and defensive array by raising targets in successive bands to simulate movement.



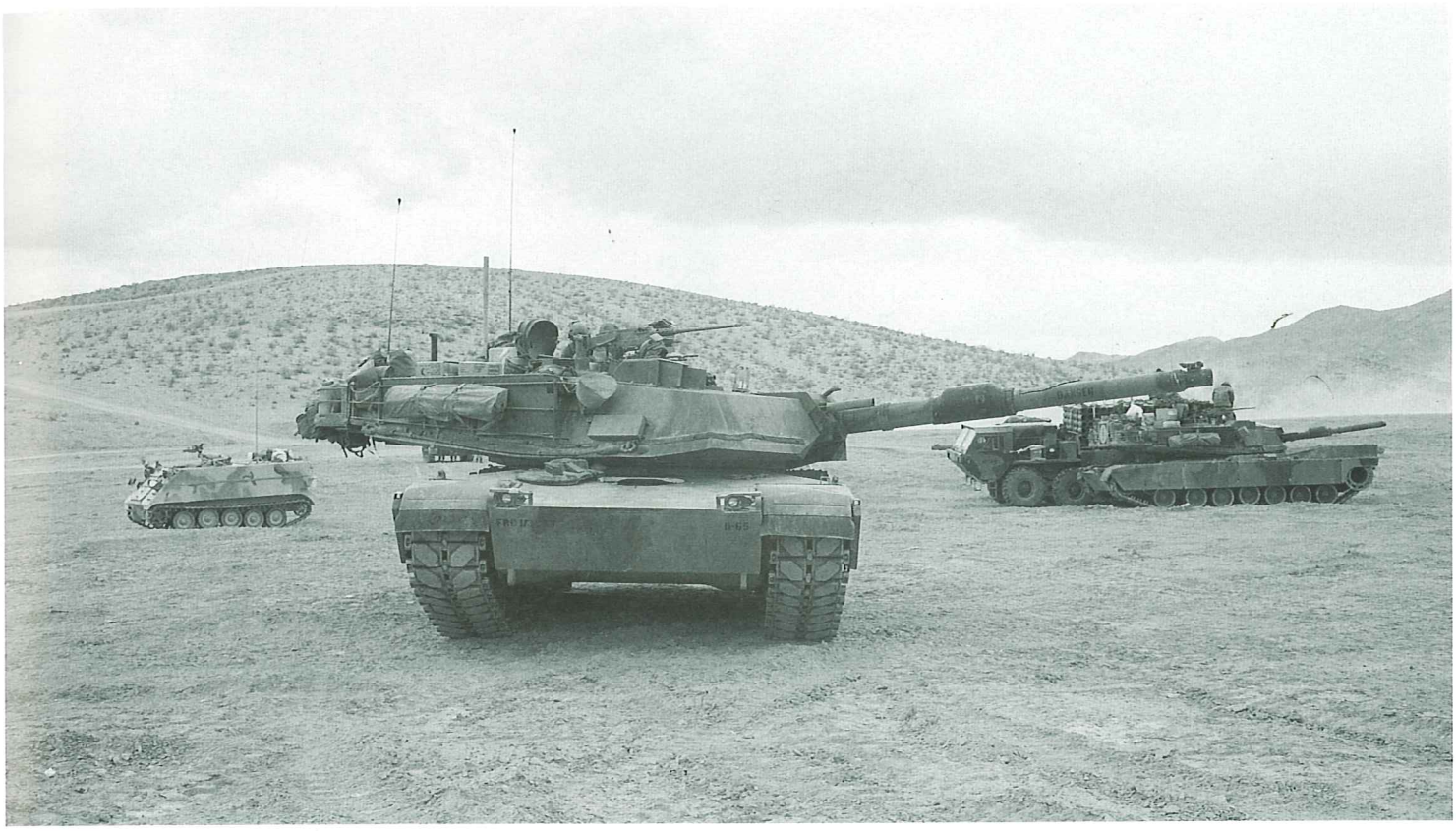
All targets used in the live-fire exercise are radio controlled mechanisms which mount either frontal or lateral-view silhouettes of Soviet equipment. Targets are supplemented by pyrotechnic firing devices which "shoot back" using Hoffman charges to simulate tank main gun fire. In addition, some targets shoot back with "Smokey Sam" styrofoam missiles to simulate Sagger anti-tank guided missile firings and produce smoke to simulate hit burning vehicles. (NTC photo)

Observer/Controllers (OCs) in a pair of M551 vehicles watch a Bradley fires its 25mm cannon. OCs on the live fire range have the added responsibility of overseeing the safe use of all types of live ammunition.

A 3rd Armored Cavalry Regiment M1A1 MBT fires its 120mm main gun at night during live fire exercises. Targets used in live fire exercises have thermal blankets that produce the appropriate thermal signature for gunners using thermal imaging sights.

The HEMTT has become the prime mover for the U.S. Army logistics in the field. Blue Force units that do not receive fuel, ammo, food, and other supplies may have to do without.

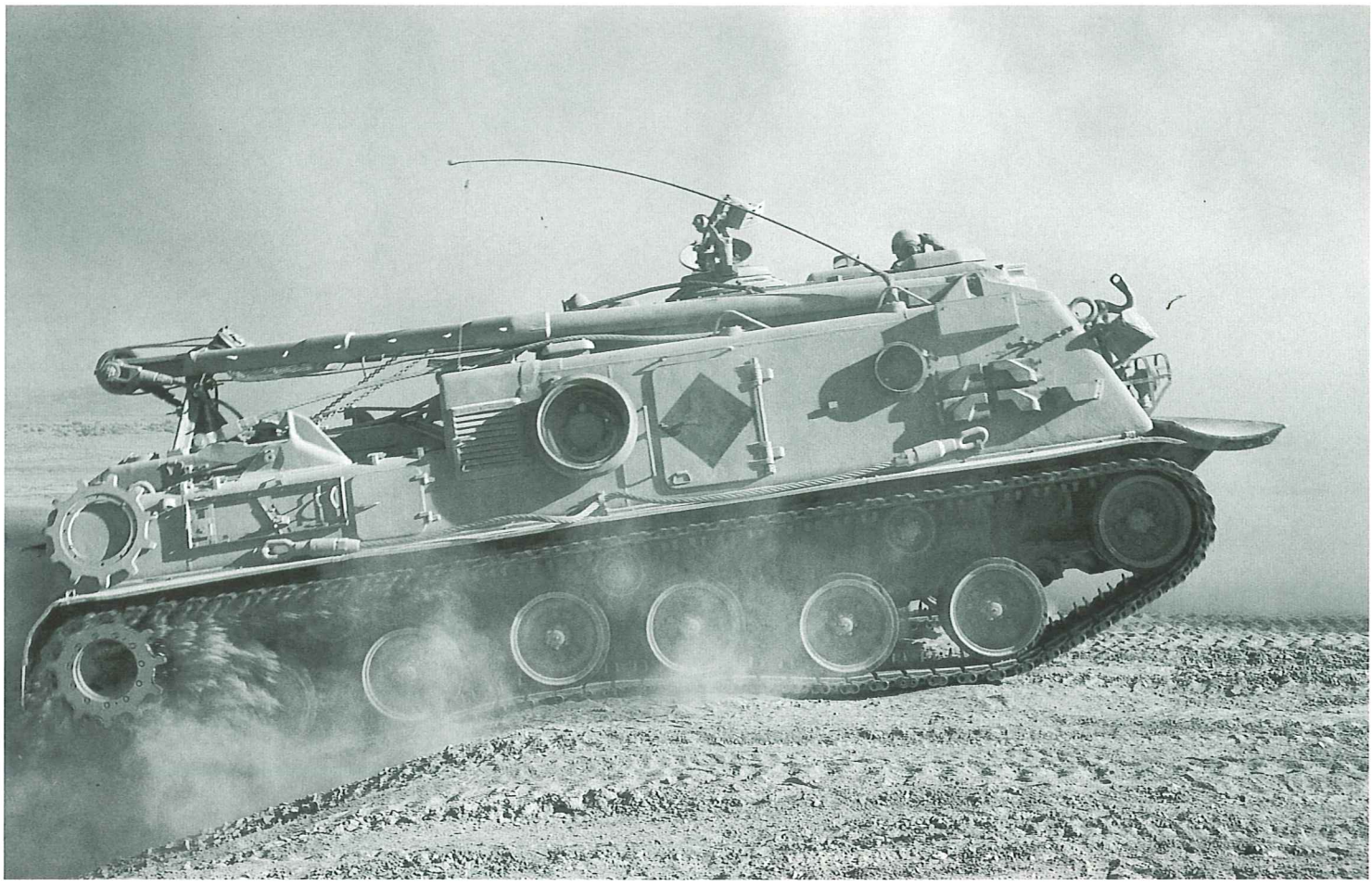
After a battle, a 3rd Armored Cavalry Regiment M1A1 MBT is rearmed with 120mm main gun ammunition from a Heavy Expanded Mobility Tactical Truck (HEMTT).



A M1A1 MBT waits to be refuelled after receiving ammo from the HEMTT in the background.

Rear areas must be ever alert day and night for OPFOR attacks. All Blue Force assets must be protected at all times.

An Observer/Controller conducts an After Action Review (AAR) on the live fire area for the benefit of a tired 4th Infantry tank platoon.



The M88 Armored Recovery Vehicle is designed for battlefield winching, towing and recovery of tracked combat vehicles. It can tow a MBT or lift a M109.

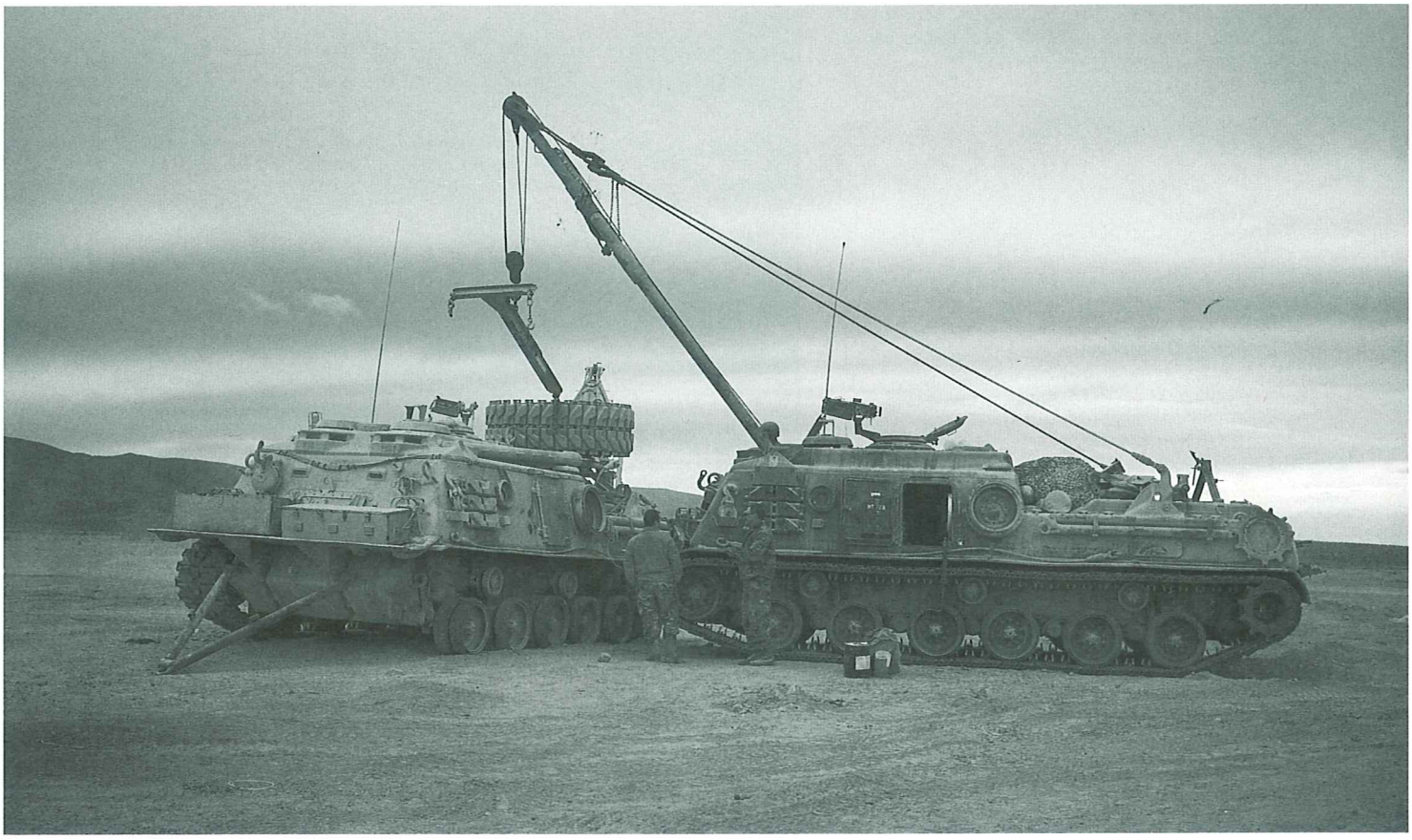
An M88 crew assists in repairs on a disabled Bradley. If this vehicle cannot be repaired here, or at a Battalion Support Area (BSA), it will not be replaced or take part in up-coming battles.

A 4th Infantry Division tank crew inspects the thrown track of their M60A3 MBT.

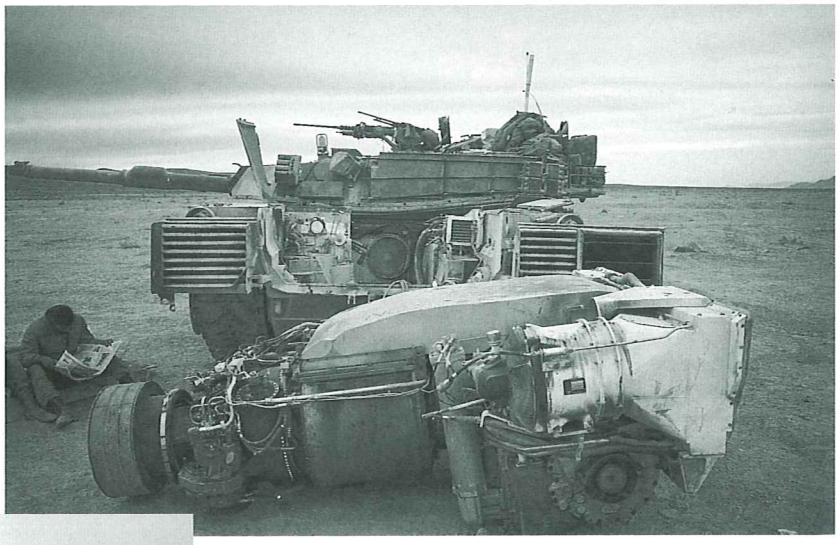
Vehicles that cannot be repaired on the battlefield are towed to a Battalion Support Area (BSA) for more extensive repairs. Here a 1st Cavalry Division M578 light armored recovery vehicle tows a damaged M577.

The HEMTT wrecker has proven to be a sturdy and reliable recovery vehicle for wheeled vehicles.

At a Battalion Support Area (BSA), major repairs can be made to vehicles. Engines, transmissions, axles, and tracks can be removed, repaired, and replaced.

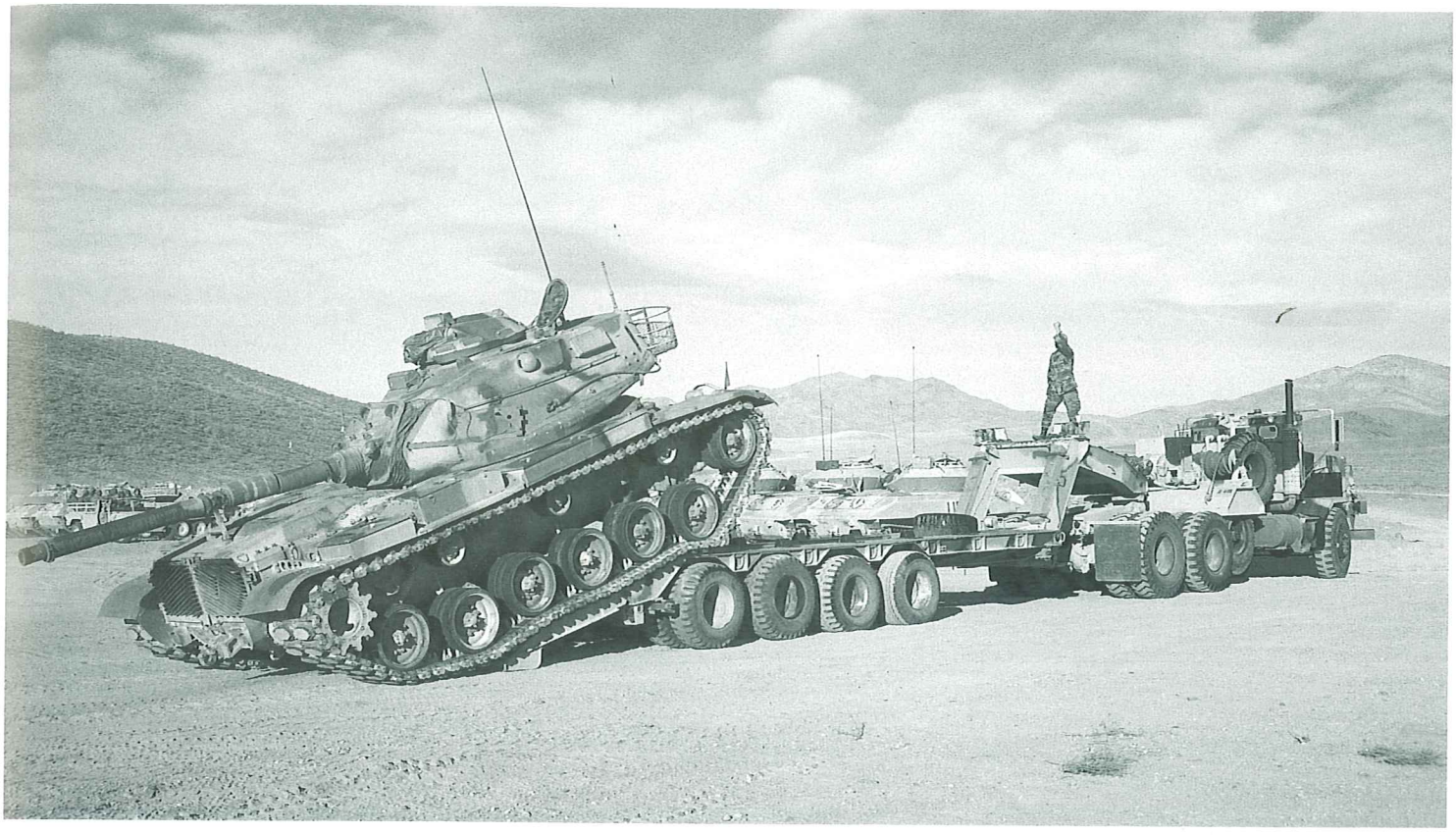


An M88 uses its boom to lift a section of track on to a disabled M88 at a BSA.



A 3rd Armored Cavalry Regiment M1A1 MBT with its powerpack removed.

An M1 tank crew rigs a makeshift shelter on the turret of their disabled tank that has been towed to a BSA on the live fire area.



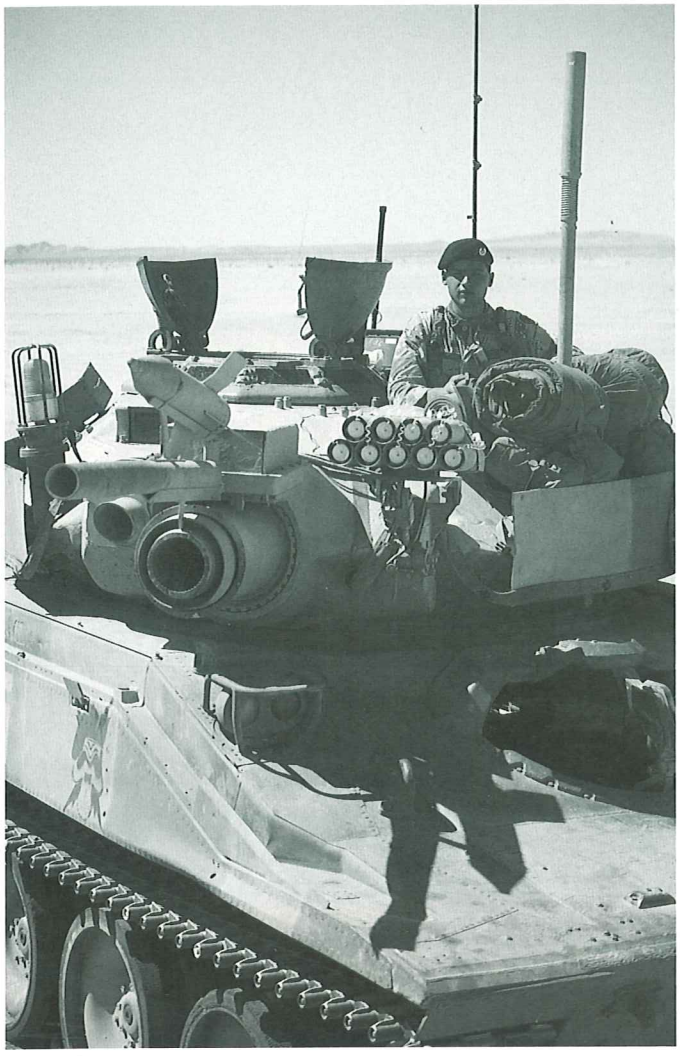
An M60A3 MBT being loaded for the trip back to the railhead at the end of a rotation.

2nd Armored Division vehicles being loaded onto flatcars for the trip back to Fort Hood, Texas after spending a 20 day rotation at the NTC.

All Blue Force helicopters are MILES equipped, with attack helicopters armed with the appropriate MILES replications of their weapon systems.

Providing combat, combat support and combat service support assets, Army aviation affords the brigade ground maneuver commander mobility, maneuverability, flexibility and firepower.

Besides the AH-64A Apache attack helicopter and the earlier AH-1 Cobra attack helicopter flying simulated combat missions at the NTC, you will also find the OH-58 Delta Scout helicopters, the UH-60A Black Hawk transport helicopters and the Viet Nam era Huey's.



The NTC's most important goal is to provide soldiers the ability to practice their craft in a realistic wartime environment where they can make mistakes and learn from them, not die because of them. Soldiers that undergo the vigorous 20-day rotation at the National Training Center have gained renewed confidence in their combat skills. They leave with reasonable certainty that their "deaths" at the hands of the infamous OPFOR will ultimately enhance their survivability on a real battlefield.

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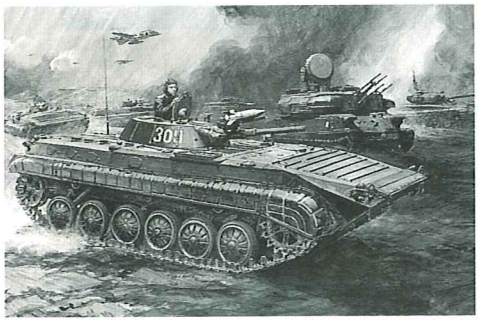

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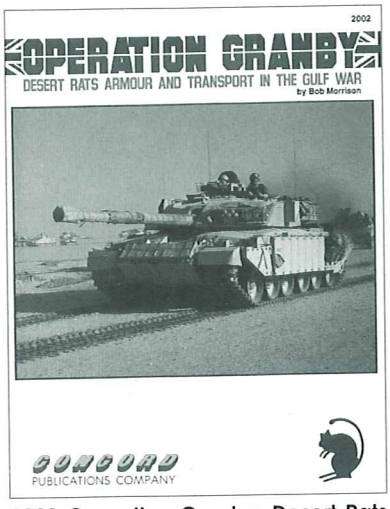

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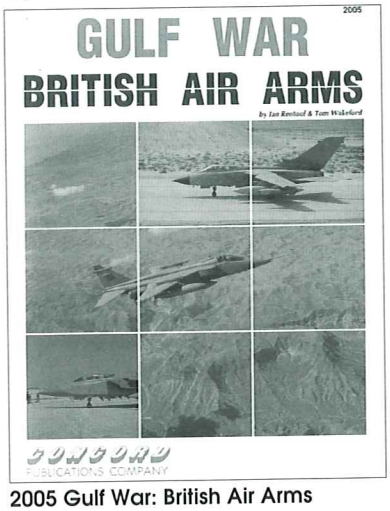

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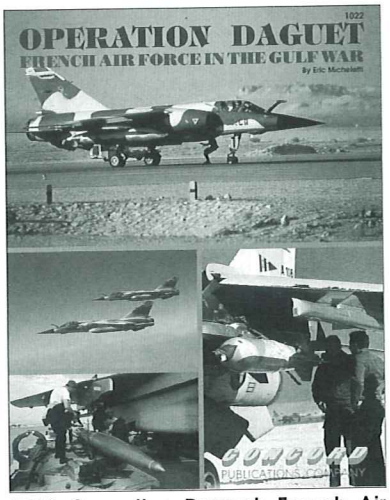

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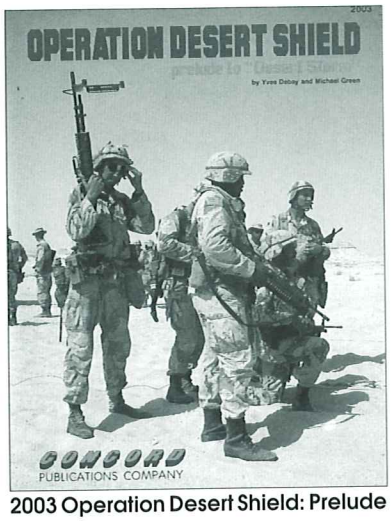

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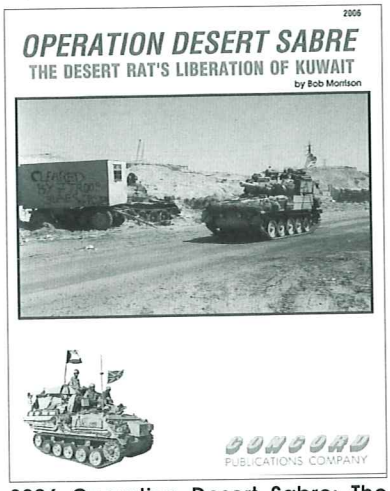

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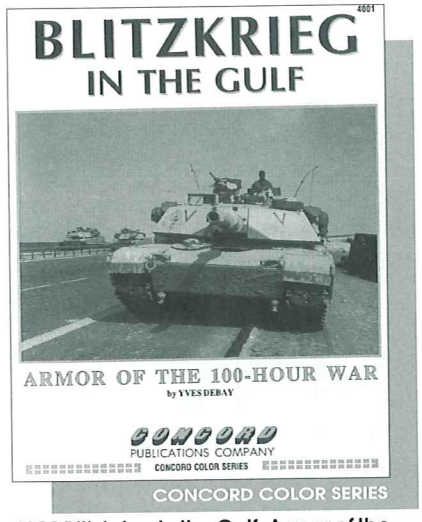

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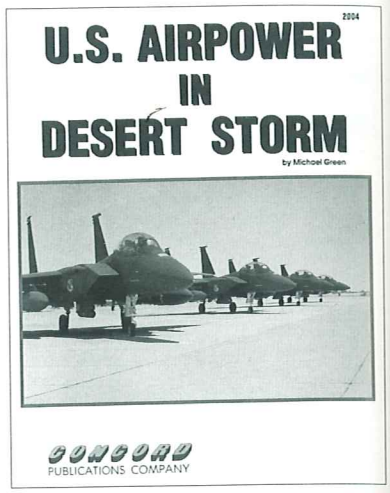

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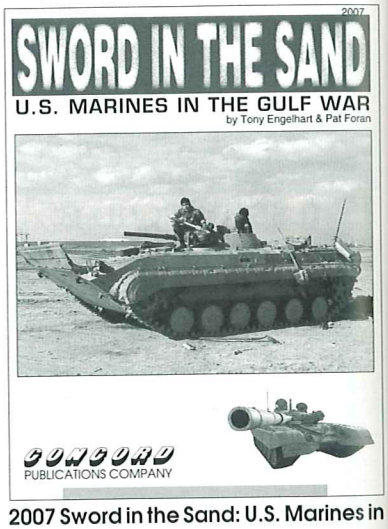

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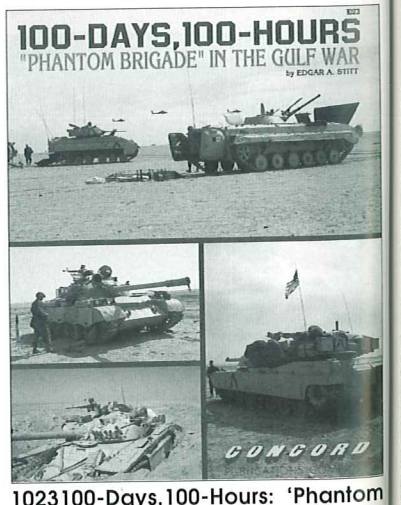

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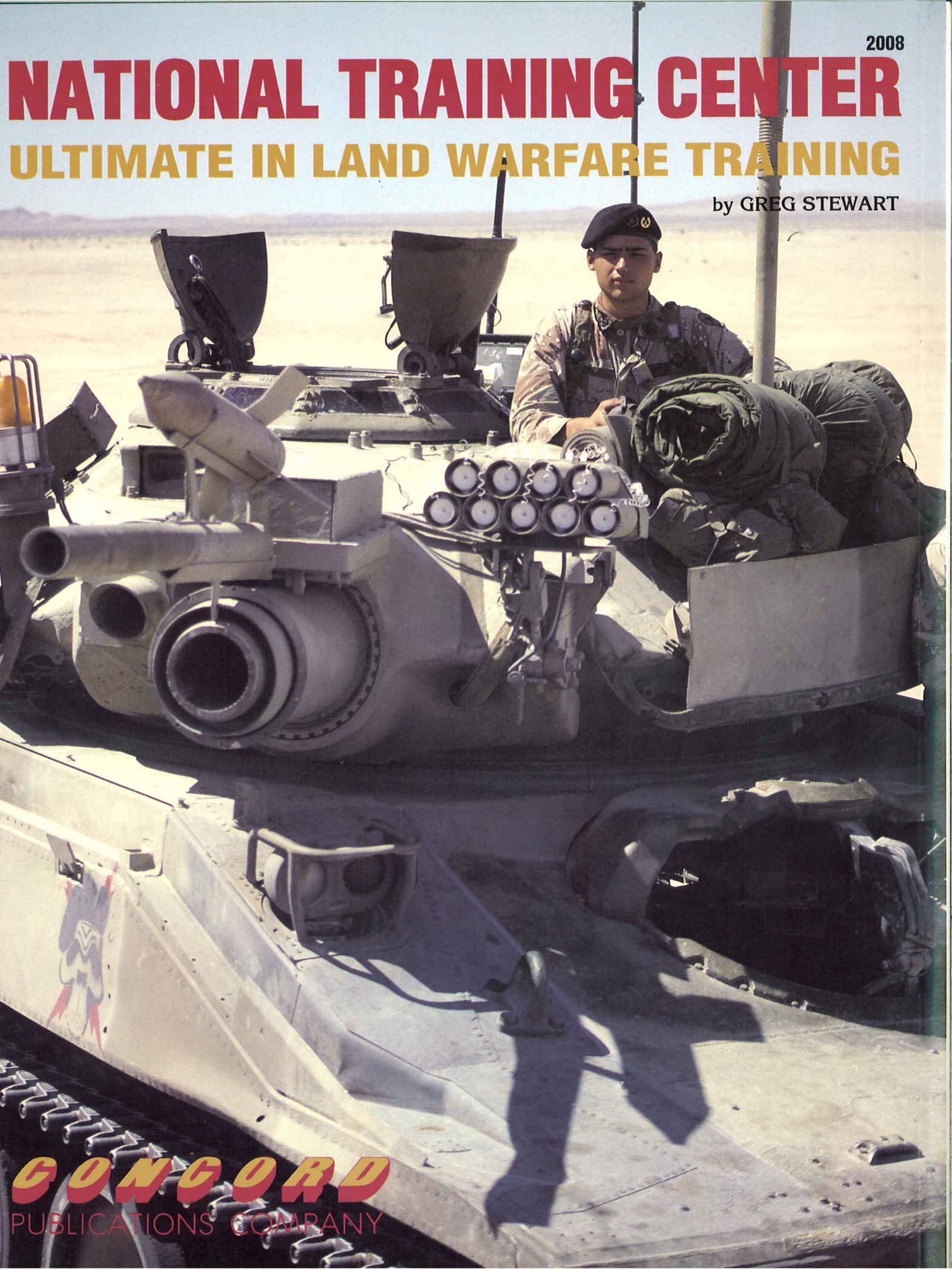

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